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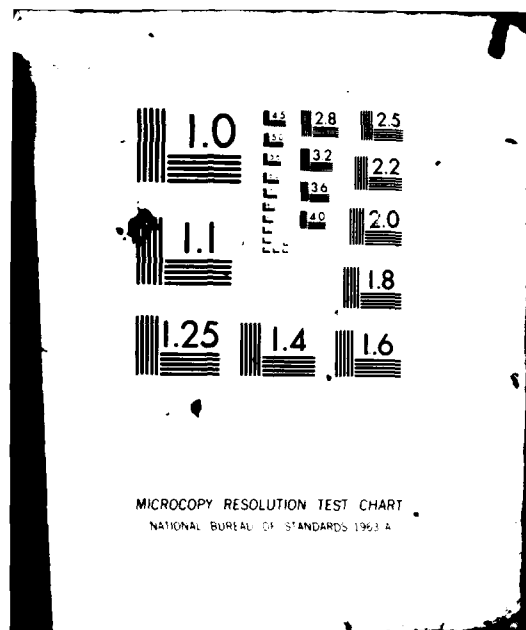
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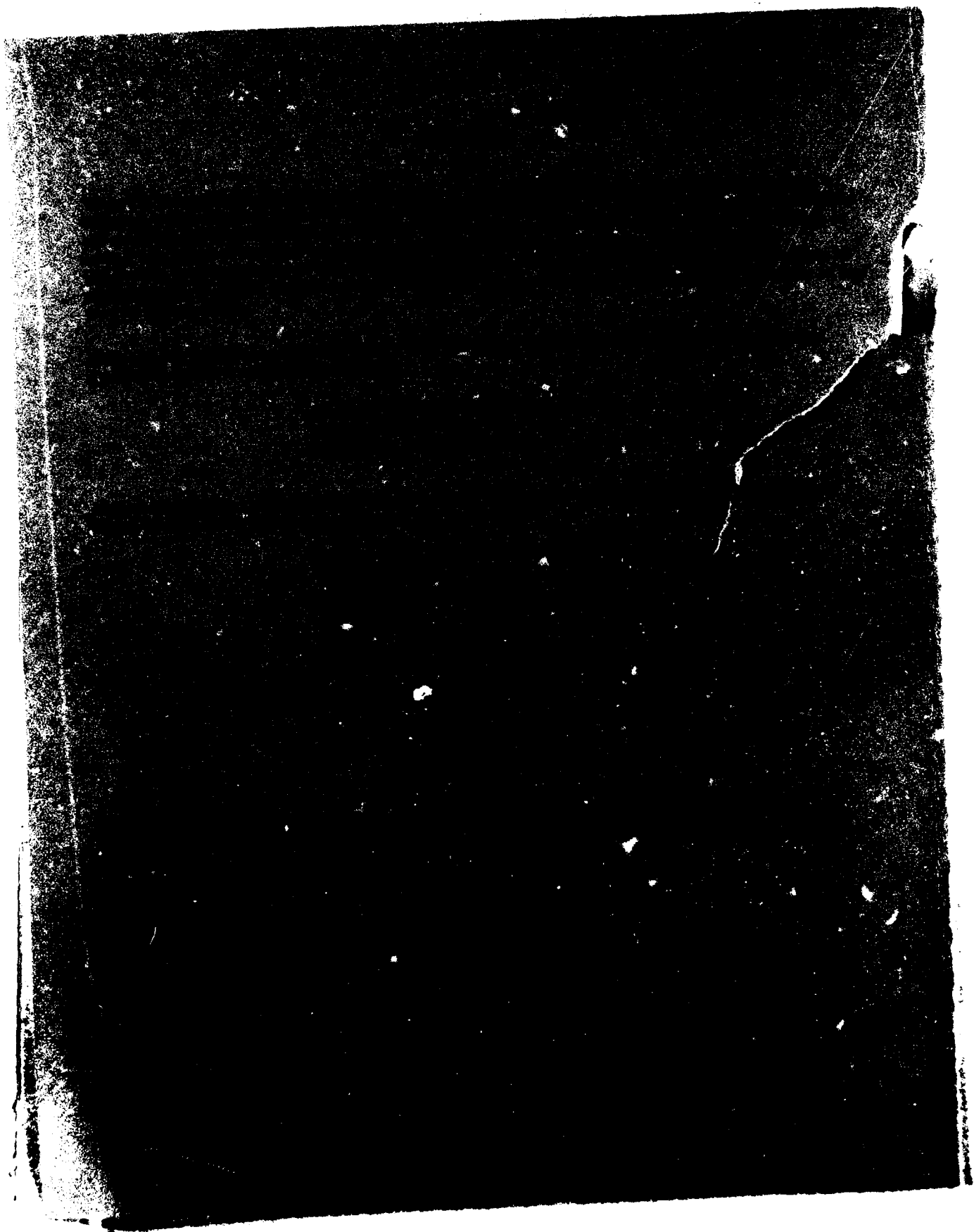
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speech interference level, perceived noise level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 36 locations are normalized to standard meteorological conditions and extrapolated from 10 - 1600 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application," AMRI-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

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## PREFACE

This report was prepared by the Biodynamic Environment Branch, Air Force Aerospace Medical Research Laboratory, under Project/Task 723107, Technology to Define and Assess Environmental Quality of Noise, from Air Force Operations. The author gratefully acknowledges Mr. John Cole and Mr. Robert Powell for assistance in preparing this report, Mr. Robert Lee for assistance in acquiring the raw data, Mr. Henry Mohlman, Mr. Keith Kettler and Mr. Fred Lampley of the University of Dayton for assistance in the mechanics of data processing and Mrs. Norma Peachey for typing and assistance in preparation of graphics.



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## INTRODUCTION

The A/M32A-86 generator set is a diesel engine driven source of electric power used for the starting of aircraft, and for ground maintenance. This unit is manufactured by Hobart.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this unit. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with operations of the A/M32A-86 generator set.

This volume is one of a series published by the Air Force Aerospace Medical Research Laboratory (AFAMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type, noise data in the handbook describe the noise produced during ground operations of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Refer to Volume 1 (reference 1) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight flight crew and passenger noise, near-field ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AFAMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index as it is generated.

Direct any questions concerning the technical data in this report and other handbook volumes to: AFAMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

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1. Cole, John N.; *USAF Bioenvironmental Noise Data Handbook, Volume 1: Organization, Content and Application, AMRL-TR-75-50(1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.*

## NEAR-FIELD NOISE

### MEASUREMENTS

A standard A/M32A-86 generator set was operated outdoors on a concrete apron at normal rated conditions and electrically loaded, using an A/M24T-8A load bank with no significant sound-reflective surfaces present except the ground plane. The load bank was physically located so as to not interfere with the A/M32A-86 noise field. Table 1 notes the surface meteorological conditions at the time of measurement.

Figure 1 identifies 72 noise measurement locations at a height of 1.5 meters above the concrete apron (nominal ear level of ground crew). The 0 degree reference direction passes through the tow bar. The 36 locations on the two inner circles are in the acoustic near-field of the source where the sound wave fronts generally do not spherically diverge and the source appears to be spatially distributed (i.e., not a point source). Consequently, these near-field data cannot be extrapolated to longer distances but do properly define the levels at locations close to the unit.

Near-field measurements were also made at ear level at the operator control panel. Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the operator measurement location and test conditions. The designator 1/A means operator location 1 and test condition A. Such a descriptor is essential in many handbook volumes that involve multiple combinations of location/conditions. It is used in this report to maintain format consistency.

### RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the A/M32A-86 unit aircraft at the 37 specified, near-field locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measures in Table 3 which are widely used to assess the effects of noise on personnel and their performance.

For data at other intermediate near-field locations (i.e., for radial distances less than 10 meters) you can interpolate between the 72 measured data points. All near-field data are for the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short distances over which the sound is propagated.

TABLE 1

#### MEASUREMENT LOCATIONS AND TEST CONDITIONS FOR OPERATOR NOISE MEASUREMENTS

A/M32A-86 Generator Set  
Wright-Patterson AFB, 19 March 1980  
NSN 6115-01-061-6610, Field # CO3

Measurement Location	
1	Operator Control Panel
Operation	
A	Diesel Engine at 2000 RPM
Meteorology	
Temperature	9 °C
Bar Pressure	.768 m Hg
Rel Humidity	40 %
Wind - Speed	4.1 m/sec (8 Kts)

## **FAR-FIELD NOISE**

### **MEASUREMENTS**

Noise measurements were also made on the same A M32A-86 unit under the same test conditions at the outer circle locations on Figure 1. These 36 locations are in the acoustic far-field of the source where the sound wave fronts spherically diverge and the unit may be regarded as a point noise source. Under these far-field conditions, the measured data can be extrapolated to longer distances.

### **RESULTS**

Table 4 lists the overall and 1/3 octave band SPL measured at the 36 far-field locations under the meteorological conditions at the time of the test. These data were normalized to 10 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 2 which provides a compact summary of the far-field noise characteristics of the A M32A-86 generator set in a standard format.

These measured data were also used to derive sets of equal noise contours (Figures 3 through 9) describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. Note that Figure 8 contours identify limiting exposure times for personnel. Missing data points on any of the contours are the result of eliminating measured data which contained excessive influence of spurious background noise present at the time of measurement. In some cases contour levels at these missing data points were estimated and indicated with dashed lines.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)														IDENTIFICATION	
2 1/3 OCTAVE BAND														OMEGA 3.2	
NOISE SOURCE/SUBJECT:														TEST AU-101-001	
OPERATION:														RUN 03	
DIESEL ENGINE AT 2000 RPM														06 APR 82	
A/M32A-85 GENERATOR SET														PAGE F1	
A/M 24T-0A LOAD BANK															
GROUND CREW															
190AMP, 240VAC, 400HZ															
NEAR FIELD NOISE LEVELS															
23KW PER AC PHASE															
LOCATION/CONDITION															
FREQ	DISTANCE (M)-->	4	4	4	4	4	4	4	4	4	4	4	4	4	4
(HZ)	ANGLE (DEG)-->	0	20	40	60	80	100	120	140	160	180	200	220	240	
	CONDITION----	A	A	A	A	A	A	A	A	A	A	A	A	A	
25		68<	69<	71<	69<	65<	66<	63<	66<	64<	63<	64<	63<	65<	
31.5		76	75	72	71	66<	66<	64<	66<	64<	64<	64<	64<	66<	
40		71	70	69	67<	66<	65<	64<	68<	65<	65<	65<	63<	63<	
50		70	70	69	65<	65<	64<	63<	68	66<	65<	65<	65<	65<	
63		79	78	77	76	75	73	70	70	69	63	68	68	71	
80		75	74	73	72	71	71	69	70	69	63	69	69	69	
100		84	82	80	77	75	75	74	74	74	74	74	76	76	
125		105	103	100	99	99	94	86	90	93	92	84	90	89	
160		93	92	89	87	87	82	78	82	86	86	86	81	79	
200		84	85	81	80	81	81	84	85	81	78	80	81	79	
250		99	104	96	95	97	97	92	95	99	89	93	94	84	
315		82	84	87	85	84	86	82	84	84	84	86	86	81	
400		81	85	84	79	84	80	83	82	85	84	82	83	79	
500		84	85	85	81	78	79	73	76	78	77	76	78	82	
630		86	83	83	81	78	75	81	79	77	77	77	80	81	
800		87	87	86	83	82	80	83	81	84	82	80	80	80	
1000		87	88	86	86	81	80	79	81	80	81	81	81	81	
1250		84	88	89	83	81	82	80	82	90	81	81	81	83	
1600		86	84	84	81	80	79	76	80	78	80	78	81	79	
2000		83	84	82	80	75	75	77	77	75	76	76	78	77	
2500		82	84	81	78	75	75	75	77	77	77	76	76	76	
3150		80	83	80	79	75	73	74	74	75	76	75	74	75	
4000		77	77	76	76	70	69	70	70	71	72	70	70	71	
5000		79	79	79	77	72	71	73	73	73	75	73	72	73	
6300		77	77	78	75	70	69	70	71	70	72	69	68	70	
8000		77	77	78	75	69	70	70	70	71	72	69	67	70	
10000		77	77	78	76	69	70	71	71	71	72	69	69	70	
OVERALL		106	107	102	101	101	99	96	98	97	96	96	97	94	
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.															

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (D3)													IDENTIFICATION:
2 1/3 OCTAVE BAND													OMEGA 3.2
NOISE SOURCE/SUBJECT: ( OPERATION: )													TEST AU-101-001
A/M32A-66 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM )													RUN 04
GROUND CREW ( A/M 24T-5A LOAD BANK )													06 APR 82
NFAR FIELD NOISE LEVELS ( 190AMP, 240VAC, 400HZ )													PAGE F2
LOCATION/CONDITION													
FREQ	DISTANCE (M)-->	4	4	4	4	4	2	2	2	2	2	2	2
(HZ)	ANGLE (DFG)-->	260	280	300	320	340	0	20	40	60	80	100	120
	CONDITION-->	A	A	A	A	A	A	A	A	A	A	A	A
25		65<	63<	65<	70<	69<	67	78	70<	65<	72	70<	69<
31.5		67<	71	74	76	77	85	79	75	71	71	70	69
40		63<	65<	68<	71	72	80	74	71	70	69<	68<	69
50		65<	65<	67<	69	70	79	74	71	69	68	68	67
63		74	76	79	80	83	85	83	82	81	81	79	76
80		70	71	72	73	75	80	78	75	73	72	72	71
100		77	80	81	83	84	88	85	81	78	74	76	78
125		91	97	102	104	104	113	107	108	94	95	97	93
160		82	86	91	92	93	101	95	90	87	86	86	85
200		80	78	80	79	80	96	94	88	85	86	86	89
250		90	94	94	94	95	105	100	103	100	97	96	98
315		78	84	84	85	86	93	97	92	99	86	83	88
400		95	85	89	83	86	91	89	89	83	84	86	83
500		82	84	83	86	85	94	92	88	84	85	86	82
630		77	76	79	83	85	92	91	84	84	82	81	85
800		81	81	83	86	85	94	92	86	84	84	82	83
1000		73	82	83	88	90	95	92	87	84	83	83	84
1250		82	84	86	88	88	96	94	89	85	83	85	84
1600		73	80	84	85	83	93	93	88	85	81	92	81
2000		78	79	82	84	83	91	90	84	82	80	76	79
2500		75	77	82	84	81	90	88	84	90	78	78	79
3150		75	77	82	84	79	88	86	83	78	75	77	75
4000		71	73	73	80	75	84	83	79	74	72	72	71
5000		73	75	81	83	77	86	85	82	76	75	75	74
6300		70	72	80	82	75	84	84	80	74	72	71	72
8000		69	72	80	81	76	84	83	80	74	72	71	72
10000		70	72	80	81	75	85	85	80	74	73	72	71
OVERALL		95	100	103	105	105	114	111	106	102	101	101	102

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)											IDENTIFICATION:
2 1/3 OCTAVE BAND											OMEGA 3.2
NOISE SOURCE/SUBJECT: ( OPERATION: )											TEST AU-101-001
( DIESEL ENGINE AT 2000 RPM )											RUN 05
( A/M32A-66 GENERATOR SET ( A/M 24T-9A LEAD BANK )											06 APR 82
( GROUND CREW ( 19DAMP, 240VAC, 400HZ )											
( NEAR FIELD NOISE LEVELS ( 23KW PER AC PHASE )											PAGE F3
LOCATION/CONDITION											OPERATOR LOCATION
FREQ	DISTANCE (M)-->	2	2	2	2	2	2	2	2	2	TEST CONDITION
(HZ)	ANGLE (DEG)-->	160	180	200	220	240	260	280	300	320	1/A
	CONDITION-->	A	A	A	A	A	A	A	A	A	
25		65<	78	69<	69<	65<	69<	66<	67<	76	73
31.5		70	75	70	71	66<	69	72	76	80	73
40		70	72	68<	68<	65<	67<	72	77	84	72
50		69	70	69	69	69	69	68	70	73	71
63		72	73	74	76	78	80	82	84	95	83
80		72	73	74	73	73	73	74	76	77	77
100		80	81	83	84	85	85	85	85	86	83
125		97	97	92	87	94	99	103	107	111	109
160		90	90	89	83	87	89	91	96	100	90
200		90	85	91	93	89	86	93	91	93	91
250		94	95	101	97	102	104	105	104	101	98
315		91	92	94	87	92	92	94	93	91	89
400		97	88	89	89	88	89	85	84	96	87
500		84	82	87	85	87	89	87	85	90	86
630		82	80	83	84	80	86	82	85	92	82
800		84	83	80	82	83	83	84	86	90	85
1000		85	85	85	86	84	84	86	88	90	88
1250		94	85	87	83	87	87	88	88	92	87
1600		84	82	83	83	84	83	84	85	94	84
2000		79	81	80	80	81	81	82	84	97	81
2500		78	81	80	79	79	81	81	84	97	81
3150		77	79	77	76	77	78	81	83	99	78
4000		72	73	73	73	73	74	77	81	85	73
5000		73	75	75	75	75	77	78	82	96	75
6300		70	72	72	73	74	75	77	80	94	72
8000		70	73	73	74	74	75	77	80	94	72
10000		69	73	74	75	76	76	77	80	94	73
OVERALL		101	101	103	101	104	106	106	110	112	104

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)											
2 OCTAVE BAND											
NOISE SOURCE/SUBJECT: ( OPERATION: )											
A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM )											
GROUND CREW ( A/M 24T-8A LOAD BANK )											
NEAR FIELD NOISE LEVELS ( 190AMP, 240VAC, 400HZ )											
23KV PER AC PHASE											
IDENTIFICATION: )											
OMEGA 3.2											
TEST AU-101-001											
RUN 03											
06 APR 82											
PAGE J1											
LOCATION/CONDITION											
FREQ	DISTANCE (M)-->	4	4	4	4	4	4	4	4	4	4
(HZ)	ANGLE (DEG)-->	0	20	40	60	80	100	120	140	160	180
	CONDITION----	A	A	A	A	A	A	A	A	A	A
31.5		78	77	75	74	70	70	69	71	59	69
63		80	80	79	78	77	75	73	74	73	72
125		105	103	100	99	99	94	87	91	84	83
250		99	105	96	95	97	97	93	96	91	91
500		83	69	80	85	85	83	85	84	87	85
1000		92	92	92	83	85	85	85	86	85	85
2000		89	89	87	85	82	81	82	83	83	82
4000		84	85	83	82	77	76	77	78	73	77
8000		82	82	82	80	74	75	75	75	76	74
OVERALL		105	107	102	101	101	99	96	96	97	94

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)												
OCTAVE BAND												
IDENTIFICATION:												
2												
OMEGA 3.2												
TEST AU-101-001												
NOISE SOURCE/SUBJECT: ( OPERATION: )												
( DIESEL ENGINE AT 2000 RPM )												
A/M32A-86 GENERATOR SET ( A/M 24T-8A LOAD BANK )												
GROUND CREW ( 190AMP, 240VAC, 400HZ )												
NEAR FIELD NOISE LEVELS ( 23KW PER AC PHASE )												
PAGE J2												
LOCATION/CONDITION												
DISTANCE (M)--> 4 4 4 4 4 2 2 2 2 2 2 2 2												
ANGLE (DEG)--> 260 280 300 320 340 0 20 40 50 60 100 120 140												
CONDITION--> A A A A A A A A A A A A A												
FREQ (HZ)												
31.5	70	72	75	78	78	89	82	77	74	76	74	73
63	76	77	80	81	82	87	84	83	82	81	80	78
125	92	97	102	104	104	113	107	100	95	96	97	94
250	90	94	95	95	95	105	108	103	100	97	97	99
500	87	88	90	89	90	97	96	92	88	89	90	88
1000	86	87	89	92	91	100	97	93	89	88	88	88
2000	83	84	87	89	88	96	96	91	87	85	85	85
4000	78	80	85	88	82	91	90	86	81	79	80	79
8000	74	77	85	86	81	89	89	85	79	77	76	75
OVERALL	96	100	103	105	105	114	111	106	102	101	101	102



TABLE: MEASURED SOUND PRESSURE LEVEL (DB)											IDENTIFICATION:
2 OCTAVE BAND											OMEGA 3.2
											TEST AU-101-001
NOISE SOURCE/SUBJECT:											RUN 05
( OPERATION:											
( DIESEL ENGINE AT 2000 RPM )											
( A/M 24T-8A LOAD BANK )											06 APR 82
( GROUND CREW )											
( 190AMP, 240VAC, 400HZ )											PAGE J3
( NEAR FIELD NOISE LEVELS )											
( 23KW PER AC PHASE )											
LOCATION/CONDITION											
FREQ	DISTANCE (M)-->	2	2	2	2	2	2	2	2	2	OPERATOR LOCATION
(HZ)	ANGLE (DEG)-->	160	180	200	220	240	260	280	300	320	TEST CONDITION
	CONDITION-->	A	A	A	A	A	A	A	A	A	1/A
31.5		73	80	74	74	74	73	74	78	83	78
63		75	77	77	78	73	81	83	85	86	84
125		98	96	94	90	95	99	103	108	112	101
250		97	97	102	99	102	104	106	105	102	99
500		89	89	92	91	92	92	89	89	93	90
1000		89	89	90	89	90	90	91	92	95	92
2000		85	86	86	86	87	86	87	89	93	87
4000		79	81	80	80	80	81	84	87	92	80
8000		75	77	78	79	79	80	82	85	89	77
OVERALL		101	101	103	101	104	106	108	110	112	104

TABLE: MEASURES OF HUMAN NOISE EXPOSURE												IDENTIFICATION:
3												OMEGA 3.2
NOISE SOURCE/SUBJECT: ( OPERATIONS: )												TEST AU-101-001
A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM )												RUN 83
GROUND CRFM ( A/M 24T-8A LOAD BANK )												05 APR 82
NEAR FIELD NOISE LEVELS ( 190AMP, 240VAC, 400HZ )												PAGE H1
23KV PER AC PHASE												
LOCATION/CONDITION												
DISTANCE (M)-->	4	4	4	4	4	4	4	4	4	4	4	4
ANGLE (DEG)-->	0	20	40	60	80	100	120	140	150	180	200	220
CONDITION----->	A	A	A	A	A	A	A	A	A	A	A	A
HAZARD/PROTECTION												
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR												
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR												
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)												
NO PROTECTION												
OASLC	105	107	102	101	101	99	96	96	97	96	96	94
OASLA	97	99	96	94	92	92	91	92	90	91	90	90
T	50	36	60	85	120	120	143	120	170	143	170	170
MINIMUM QPL EAR MUFFS												
OASLA*	95	85	80	79	79	76	72	75	74	73	73	71
T	404	404	960	960	960	960	960	960	960	960	960	960
AMERICAN OPTICAL 1700 EAR MUFFS												
OASLA*	80	80	75	74	75	72	67	70	69	69	69	66
T	960	960	960	960	960	960	960	960	960	960	960	960
V-51R EAR PLUGS												
OASLA*	74	77	72	70	70	70	65	69	67	68	68	66
T	960	960	960	960	960	960	960	960	960	960	960	960
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS												
OASLA*	62	63	59	57	57	55	53	54	53	53	53	52
T	960	960	960	960	960	960	960	960	960	960	960	960
M-133 GROUND COMMUNICATION UNIT												
OASLA*	74	74	71	69	68	66	64	65	65	65	64	63
T	960	960	960	960	960	960	960	960	960	960	960	960
COMMUNICATION												
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)												
PSIL	90	90	89	86	85	83	85	84	85	85	84	85
ANNOYANCE												
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB)												
TONE CORRECTION (C IN DB)												
PNLT	114	116	111	110	109	108	106	107	106	106	106	104
C	3	3	3	3	3	2	2	2	2	2	2	2

\* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.

TABLE# MEASURES OF HUMAN NOISE EXPOSURE											IDENTIFICATION#			
3											OMEGA 3.2			
											TEST AU-101-001			
NOISE SOURCE/SUBJECT#											RUN 04			
( OPERATION#														
( DIESEL ENGINE AT 2000 RPM														
( A/M 24T-8A GENERATOR SET											06 APR 82			
( GROUND CREW														
( 190AMP, 240VAC, 400HZ														
NEAR FIELD NOISE LEVELS											PAGE M2			

TABLE: MEASURES OF HUMAN NOISE EXPOSURE											IDENTIFICATION:
3											OMEGA 3.2
NOISE SOURCE/SUBJECT: ( OPERATION: )											TEST AU-101-001
A/M32A-85 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM )											RUN 05
GROUND CREW ( A/M 24T-8A LOAD BANK )											06 APR 82
NEAR FIELD NOISE LEVELS ( 190AMP, 240VAC, 400HZ )											PAGE H3
LOCATION/CONDITION											OPERATOR LOCATION
DISTANCE (M)-->	2	2	2	2	2	2	2	2	2	2	TEST CONDITION
ANGLE (DEG)-->	160	180	200	220	240	260	280	300	220	340	1/A
CONDITION-->	A	A	A	A	A	A	A	A	A	A	
HAZARD/PROTECTION											
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR											
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR											
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)											
NO PROTECTION											
OASLC	101	101	103	101	104	106	108	109	112	115	104
OASLA	94	95	97	95	97	98	99	100	102	105	96
T	85	71	50	71	50	42	36	30	21	13	60
MINIMUM JPL EAR MUFFS											
OASLA*	79	79	80	77	80	83	85	88	91	94	81
T	960	960	960	960	960	571	404	240	143	85	807
AMERICAN OPTICAL 1700 EAR MUFFS											
OASLA*	74	74	76	73	76	78	81	83	86	89	77
T	960	960	960	960	960	807	571	339	202		960
V-51P EAR PLUGS											
OASLA*	72	72	75	72	75	77	79	78	79	81	73
T	960	960	960	960	960	960	960	960	960	807	960
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51P EAR PLUGS											
OASLA*	59	57	59	57	60	61	63	65	66	71	60
T	960	960	960	960	960	960	960	960	960	960	960
M-133 GROUND COMMUNICATION UNIT											
OASLA*	69	69	70	66	70	72	74	77	80	83	71
T	960	960	960	960	960	960	960	960	960	571	960
COMMUNICATION											
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)											
PSIL	88	88	83	89	90	89	89	90	94	96	90
ANNOYANCE											
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PND8)											
TONE CORRECTION (C IN DB)											
PNLT	109	110	112	110	113	115	116	117	120	124	112
C	2	2	1	1	2	2	2	3	3	3	2

\* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.

TABLE 1: MEASURED SOUND PRESSURE LEVEL (DB)																		IDENTIFICATION:	
1/3 OCTAVE BAND																		OMEGA 1.4	
DISTANCE = 10 METERS																		TEST AU-101-301	
NOISE SOURCE/SUBJECT:				OPERATIONS:				METEOROLOGICAL:				RUN 01							
A/H32A-85 GENERATOR SET				DIESEL ENGINE AT 2000 RPM				TEMP = 9 C				26 OCT 91							
FAR FIELD NOISE LEVELS				A/M 24T-8A LOAD BANK				BAR PRESS = .763 M HG				PAGE 2							
				190 AMP, 240VAC, 400HZ				REL HUMID = 40 %											
				23KW PER AC PHASE															
FREQ (HZ)																		ANGLE (DEGREES)	
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																			
20																		67 65 64 66 67 69 72 74 72 74 75 75 74 76 75 77 76 77	
31.5																		69 69 69 67 68 69 70 58 68 68 70 72 70 71 72 72 72 72	
40																		64 64 63 63 64 64 64 65 65 66 67 66 69 68 69 70 70 70	
50																		65 65 64 64 64 63 64 63 63 63 63 61 65 63 65 65 66 66	
63																		74 74 74 74 75 74 73 73 71 69 68 65 63 63 64 64 65 64	
80																		72 73 72 72 72 71 73 71 69 70 68 67 67 67 67 68 67 66	
100																		78 78 79 77 77 76 76 75 74 73 72 71 71 69 69 69 69 69	
125																		101 101 102 100 100 98 98 97 97 95 93 91 89 86 87 89 90 88	
150																		89 89 90 88 89 87 86 86 85 84 82 80 78 77 78 79 80 79	
200																		84 85 83 80 79 76 77 78 79 76 72 76 80 80 77 75 71 73	
250																		92 92 86 87 89 86 83 82 84 87 85 82 82 81 81 82 83 83	
315																		80 81 75 74 77 75 76 72 72 77 76 74 75 76 80 82 81 82	
400																		78 75 73 76 73 78 77 78 81 80 76 72 74 77 78 78 74 77	
500																		79 76 76 76 75 75 74 72 74 74 73 73 72 72 69 74 73 72	
630																		75 75 75 74 74 73 72 71 72 69 72 69 70 70 70 72 69 70	
800																		78 79 76 78 77 76 76 75 73 73 73 73 74 76 74 72 72 75	
1000																		81 82 81 81 80 78 78 77 74 74 73 75 72 73 76 77 75 78	
1250																		80 81 80 78 80 78 76 75 74 77 75 74 72 75 75 73 73 72	
1600																		79 77 81 78 77 77 75 72 73 70 71 70 70 73 70 71 70 71	
2000																		75 74 75 76 74 72 72 69 69 67 68 66 67 66 66 67 68 68	
2500																		73 74 75 76 75 73 74 69 68 67 66 62 63 62 64 62 63 64	
3150																		72 72 72 74 73 71 70 68 57 65 65 64 65 64 64 65 66 66	
4000																		68 68 69 70 71 69 68 67 66 62 63 62 64 62 62 62 63 64	
5000																		70 70 70 71 74 70 67 65 63 63 63 64 62 63 63 62 64 65	
6300																		68 67 69 72 69 69 65 66 61 61 60 61 60 61 60 59 62 62	
8000																		65 68 69 71 68 68 66 65 61 61 60 61 60 59 58 58 61 61	
10000																		69 69 69 70 73 68 67 65 60 62 61 62 61 62 61 58 59 61	
OVERALL																		102 102 103 100 101 99 99 96 97 97 95 93 91 90 90 92 92 91	
LEVEL CORRECTED TO																		AVERAGE BACKGROUND/ELECTRONIC NOISE.	

< LEVEL CORRECTED TO ABOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																	IDENTIFICATION:	
1/3 OCTAVE BAND																	OMEGA 1.4	
DISTANCE = 10 METERS																	TEST AU-101-001	
NOISE SOURCE/SUBJECT:																	RUN 02	
A/H32A-86 GENERATOR SET																	26 OCT 81	
FAR FIELD NOISE LEVELS																	PAGE 2	
OPERATION:																		
DIESEL ENGINE AT 2000 RPM																		
A/M 24T-8A LOAD BANK																		
190 AMP, 240VAC, 400HZ																		
23KW PER AC PHASE																		
METEOROLOGY:																		
TEMP = 9 C																		
BAR PRESS = .768 M HG																		
REL HUMID = 40 %																		

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

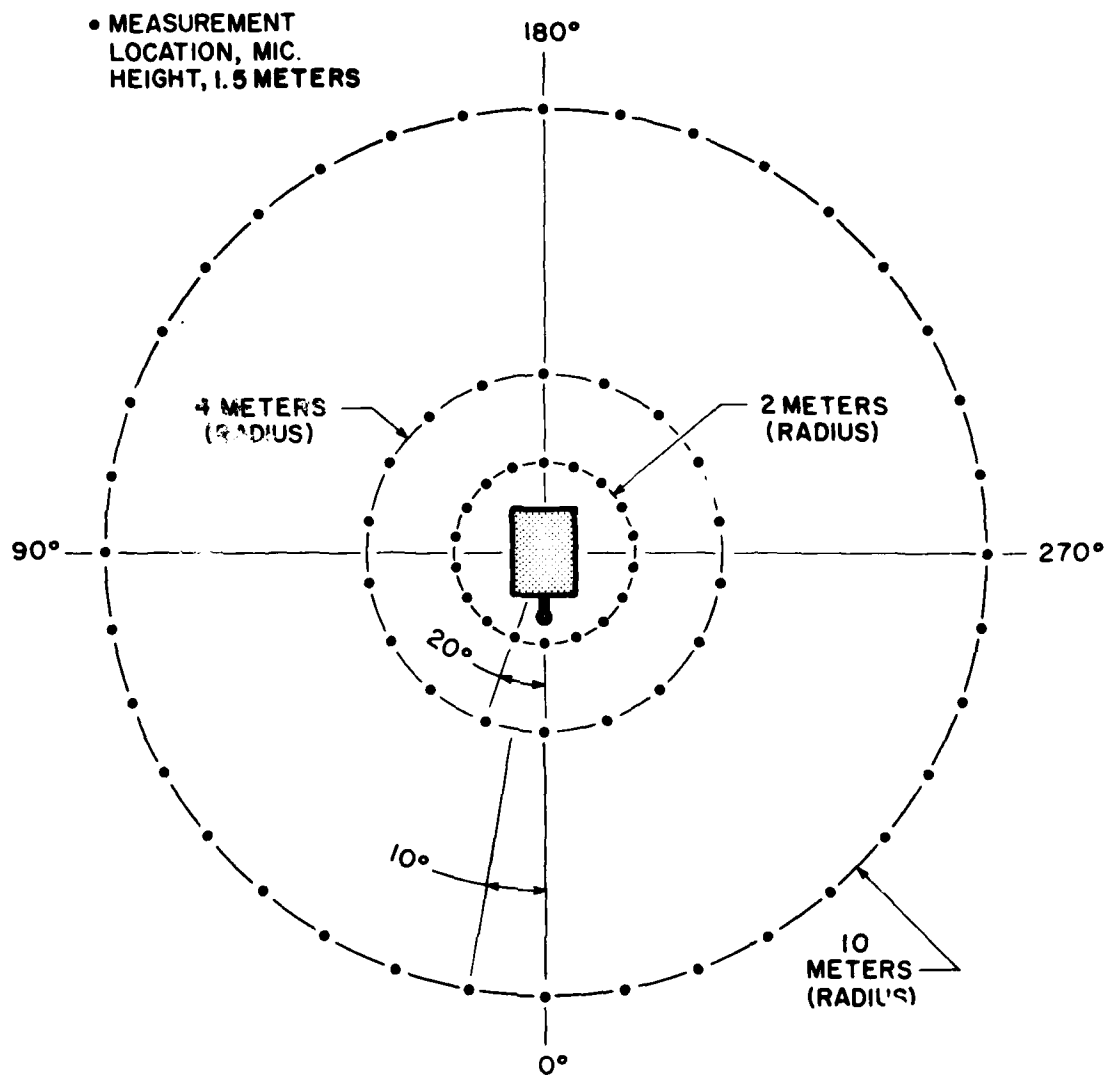


Figure 1. Measurement Locations

FIGURE 1. NORMALIZED FARFIELD NOISE LEVELS

2 DISTANCE = 10 METERS

NOISE SOURCE/SUBJECT:  
47432A-01 GENERATOR SET  
FAR FIELD NOISE LEVELS

OPERATION:  
DIESEL ENGINE AT 1500 RPM  
47432A-01 LOAD BANK  
190 AMP, 240 VAC, 60 HZ  
25KW PER 10 PHASE

METER/LOGS:  
TYPE = 10  
1000 PAFSS = 1740.4 HP  
REF. NOISE = 71.0

IDENTIFICATION:

OMEGA 104  
TEST AG-101-001  
RUN 11  
26 OCT 61  
PAGE 4

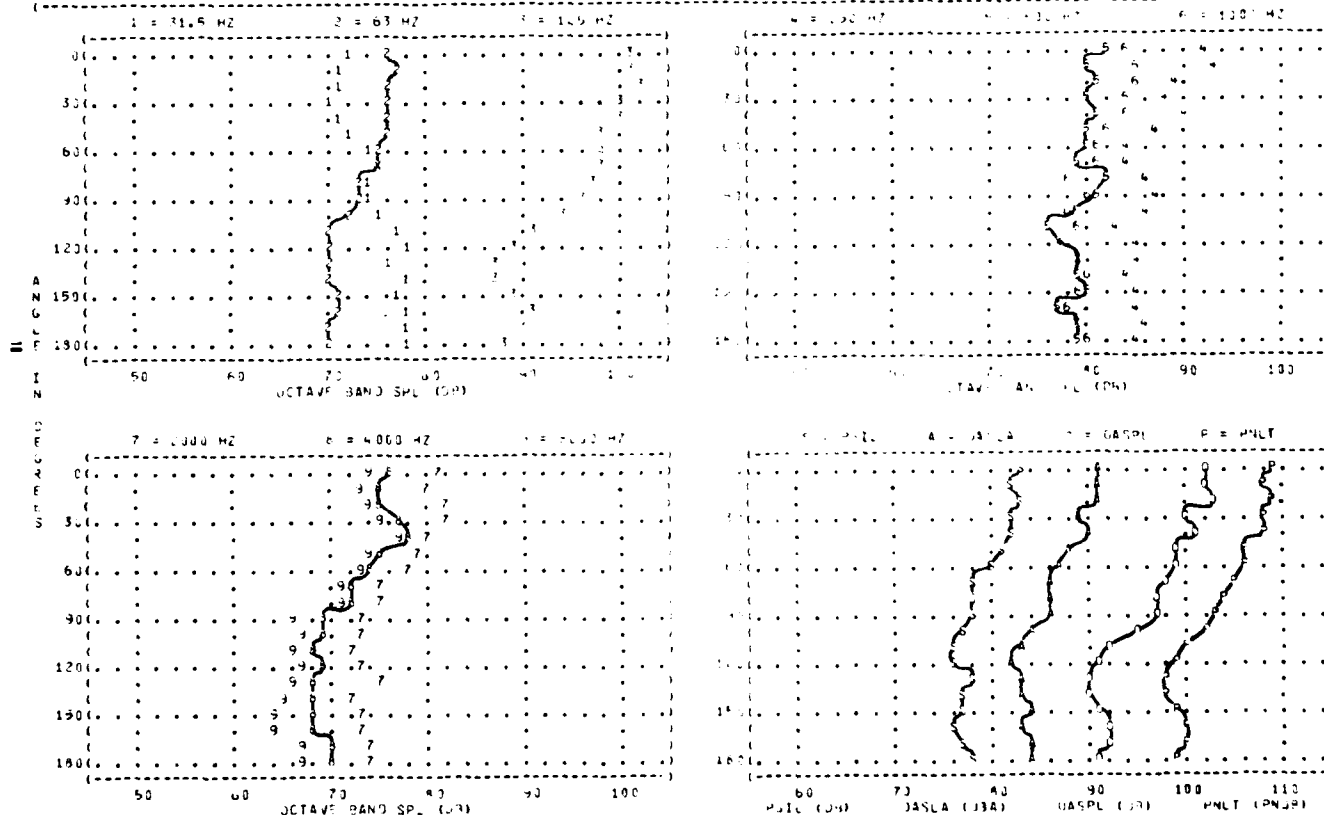
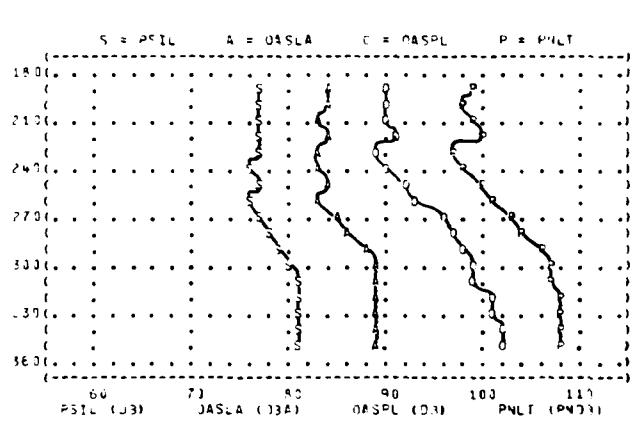
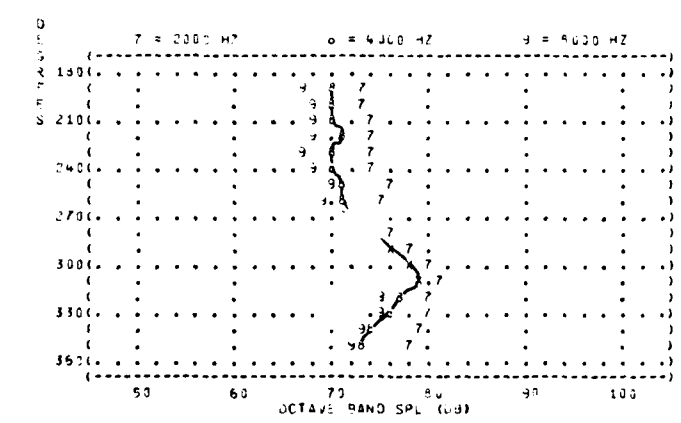
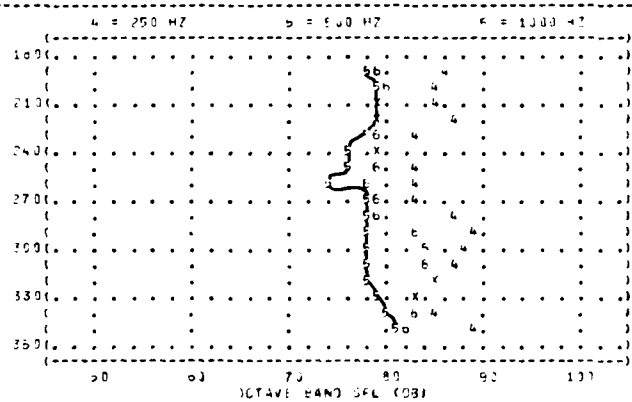
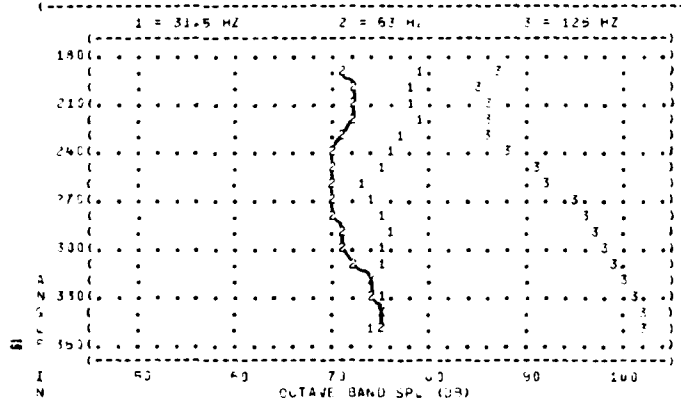
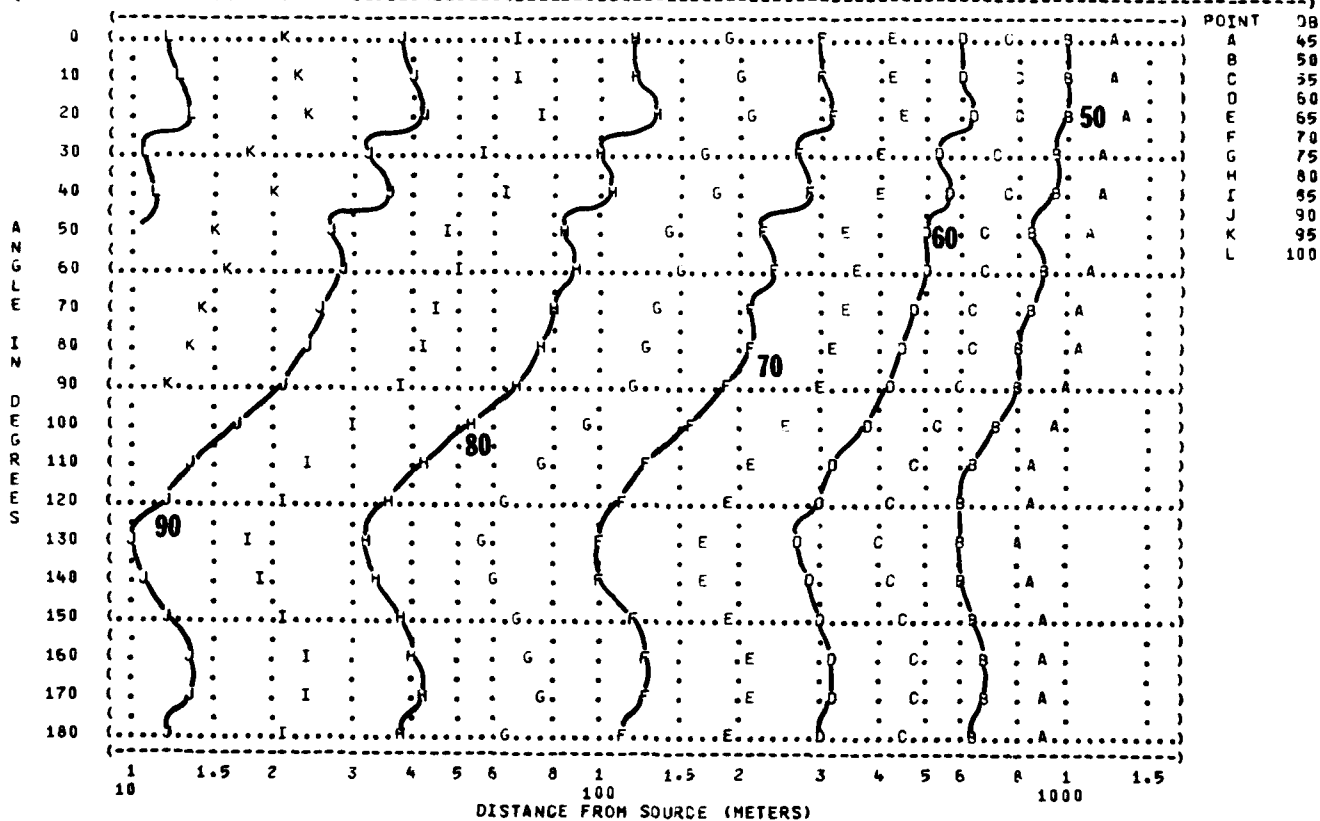




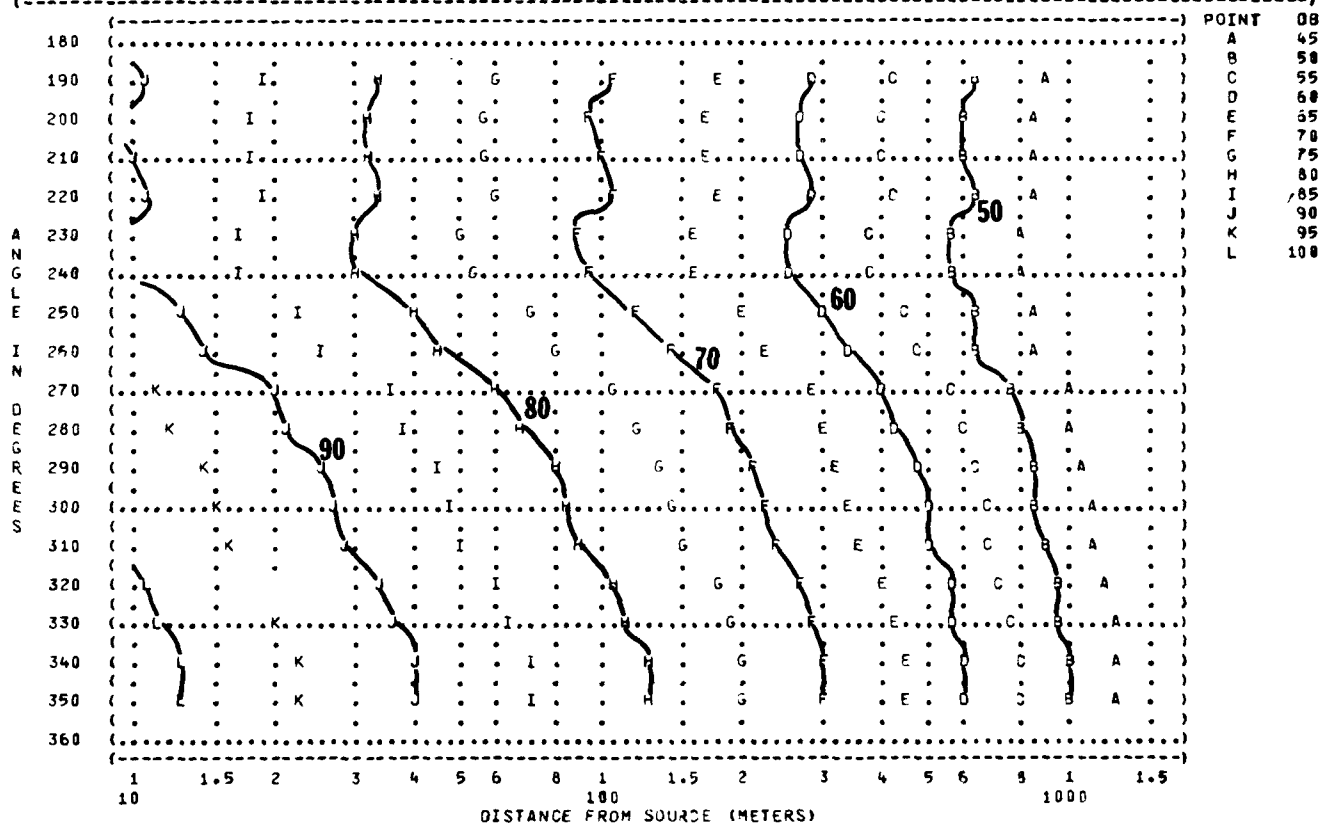
FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS			IDENTIFICATION
2	DISTANCE = 10 METERS		OMEGA 1.4
NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:	TEST AIR-101-301
A/M32A-86 GENERATOR SET	DIESEL ENGINE AT 2000 RPM	TEMP = 15 C	RUN 02
FAR FIELD NOISE LEVELS	4/M 24T-8A LOAD BANK	SAT PRESS = 1.763 M HG	26 OCT 91
	140 AMP, 240VAC, 400HZ	REL HUMID = 73 %	PAGE 4
	20KA PER AC PHASE		



( FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL) ) IDENTIFICATION: )  
 ( 3 EQUAL LEVEL CONTOURS (DB) ) )  
 ( ) OMEGA 1.4 )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ( METEOROLOGY: ( TEST A11-101-001 )  
 ( A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C ) RUN 01 )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-8A LOAD BANK ) BAR PRESS = .760 M HG ) 26 OCT 81 )  
 ( ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % ) )  
 ( ( 23KW PER AC PHASE ) ) PAGE 11 )



( FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL) ) IDENTIFICATION: )  
 ( 3 EQUAL LEVEL CONTOURS (DB) ) )  
 ( ) OMEGA 1.4 )  
 ( ) TEST AU-101-001 )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
 ( A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-8A LOAD BANK ) BAR PRESS = .760 M HS )  
 ( ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( ( 23KW PER AC PHASE ) )  
 ( ) PAGE 11 )



4

1 OMEGA 1.4

-) TEST AU-101-C01

) RUN 01 )

)

1 26 OCT 81

1 PAGE 12

( OPERATIONS:  
( DIESEL ENGINE AT 2000 RPM  
( A/M 24T-8A LOAD BANK  
( 190 AMP, 240VAC, 400HZ  
( 23KW PER AC PHASE

```

) METEOROLOGY:
)   TEMP      = 14 C
)   BAR PRESS = .750 F HG
)   REL HUMID = 70 %
)

```

1 PAGE 12

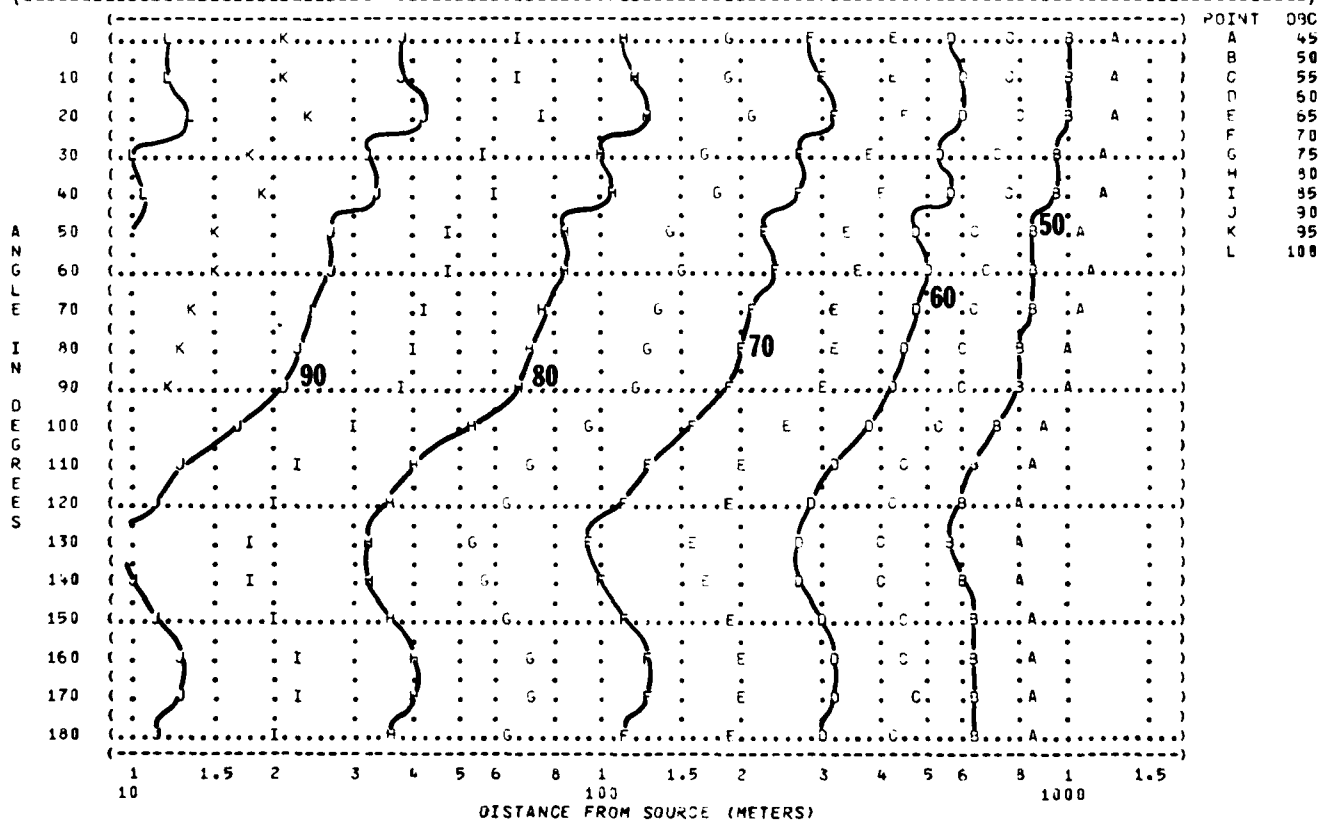
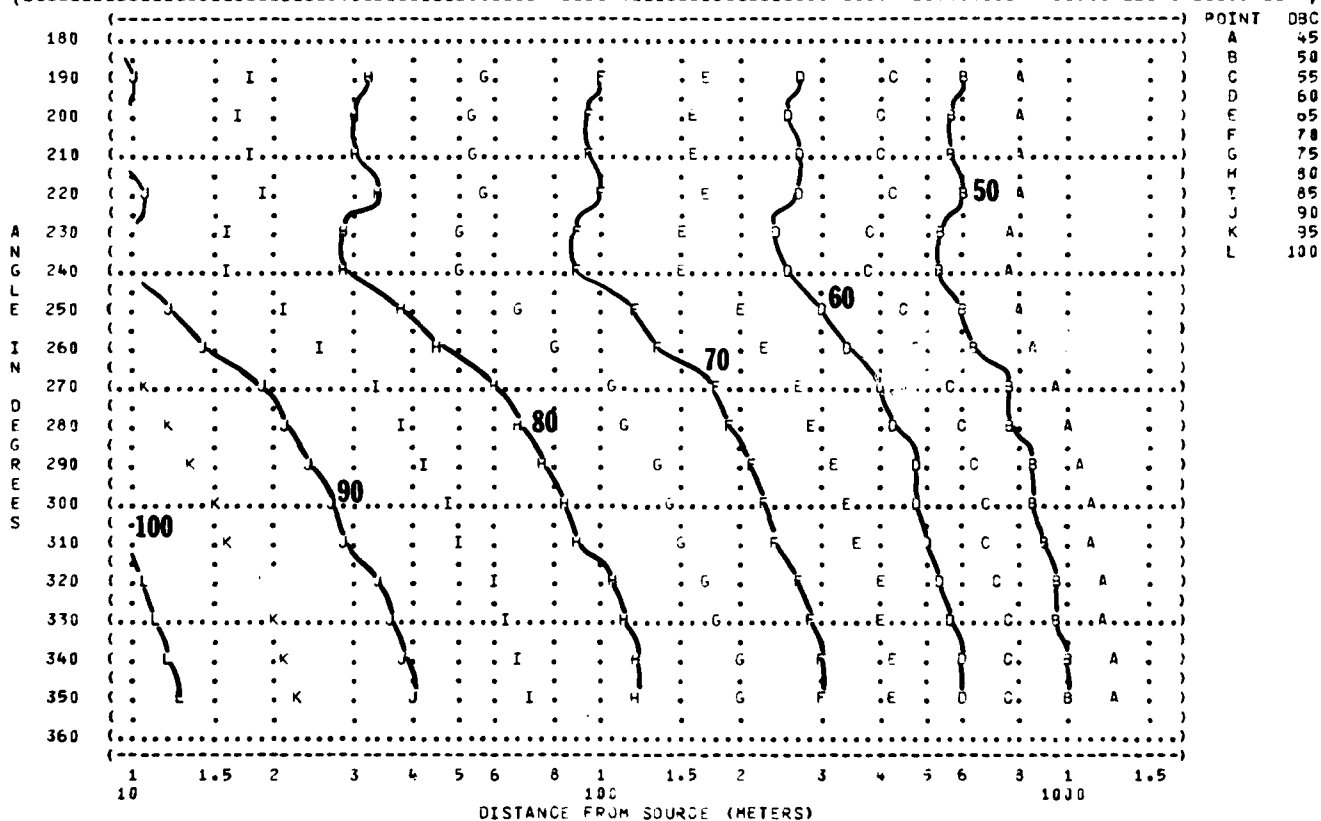


FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)  
 4 EQUAL LEVEL CONTOURS (D8C)

IDENTIFICATION:  
 OMEGA 1.4  
 TEST AM-101-001  
 RUN 02

NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY:  
 A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C  
 FAR FIELD NOISE LEVELS ( A/M 24T-3A LOAD BANK ) BAR PRESS = .760 M HG  
 ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 %  
 ( 23KW PER AC PHASE )

26 OCT 81  
 PAGE 12



( FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) ) IDENTIFICATION: )  
 ( 5 EQUAL LEVEL CONTOURS (DBA) ) )  
 ( ) OMEGA 1.4 )  
 ( ) TEST 47-101-001 )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: ) RUN 01 )  
 ( A/M32A-85 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-9A LOAD BANK ) BAR PRESS = .760 M HG ) 26 OCT 91 )  
 ( ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( ( 23KW PER AC PHASE ) ) PAGE 13 )

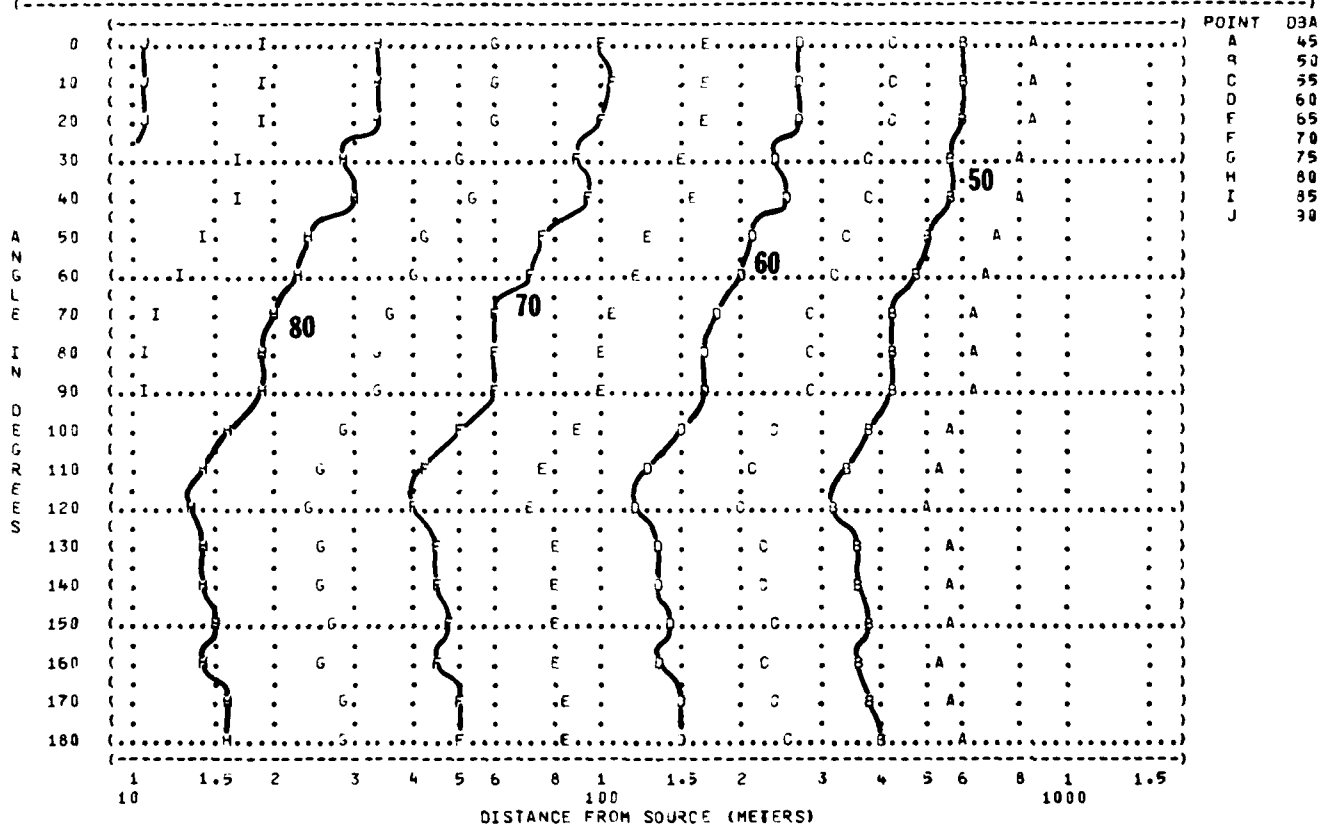


FIGURE 5 A-WEIGHTED OVERALL SOUND LEVEL (OASLA)  
EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:

OMEGA 1.4  
TEST AU-101-001  
RUN 02  
26 OCT 81  
PAGE 13

NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY:  
A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C  
FAR FIELD NOISE LEVELS ( A/M 24T-3A LOAD BANK ) BAR PRESS = .760 M HG  
( 190 AMP, 240VAC, 60HZ ) REL HUMID = 70 %  
( 23KW PER AC PHASE )

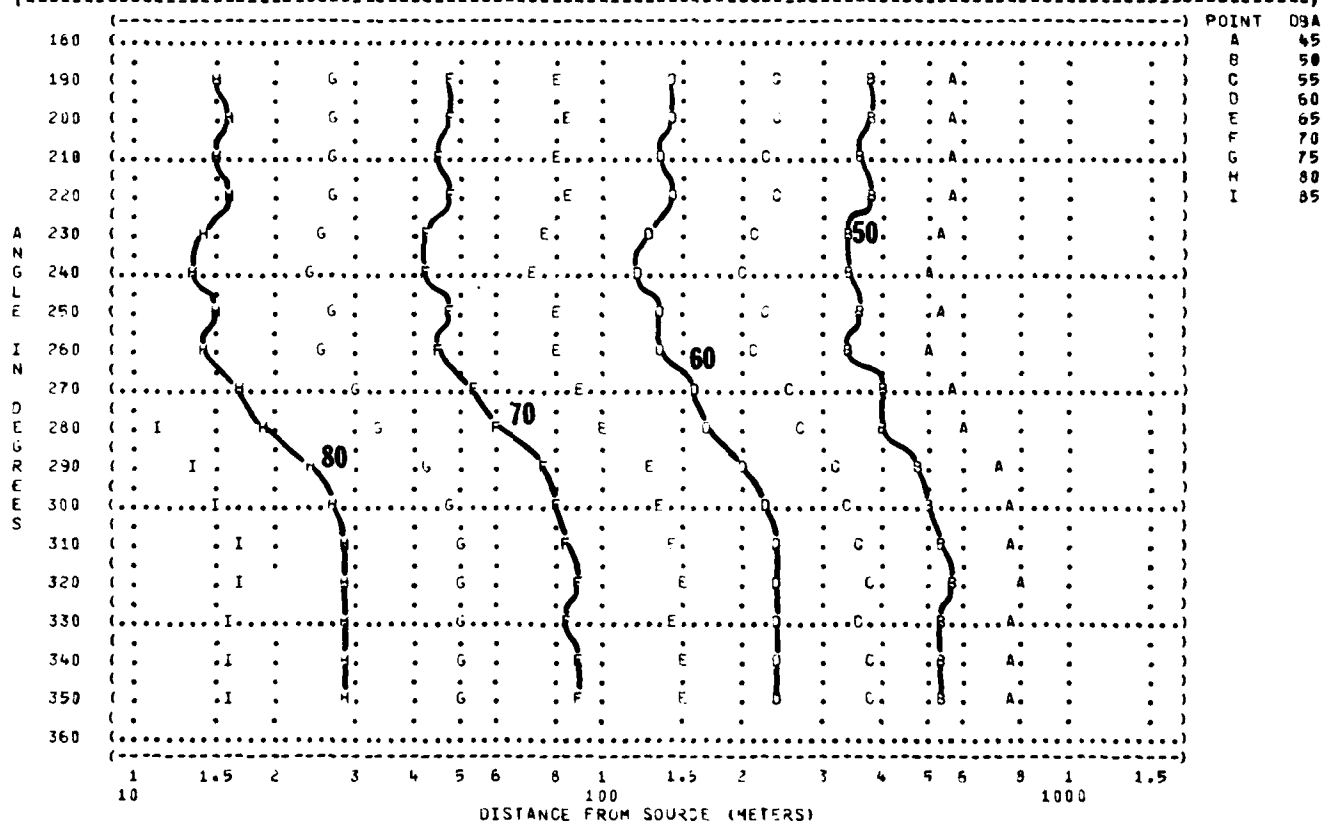


FIGURE 6 PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT)  
EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:

OMEGA 1.4

TEST AU-101-001

RUN 01

26 OCT 81

PAGE 14

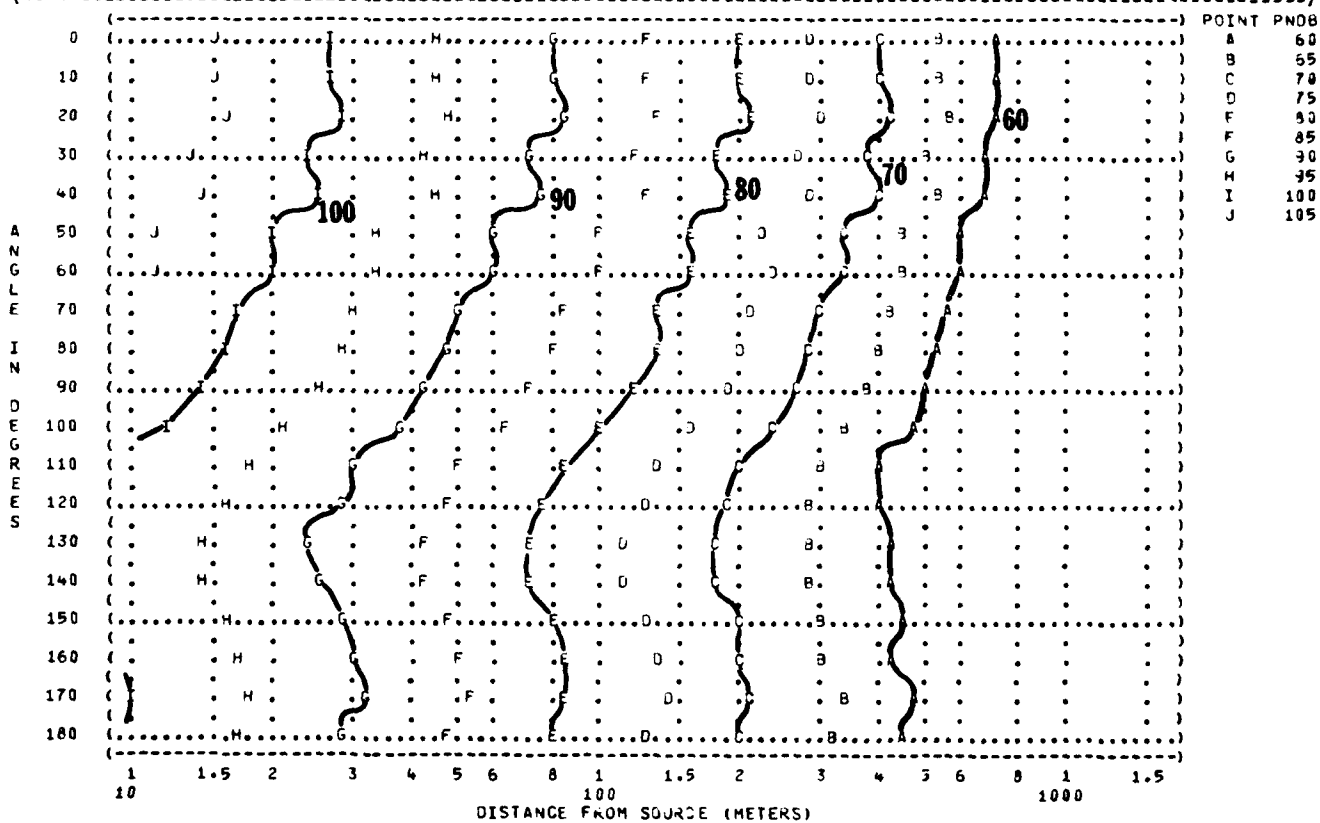
NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY:

A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C

FAR FIELD NOISE LEVELS ( A/M 24T-8A LOAD BANK ) BAR PRESS = .760 M HG

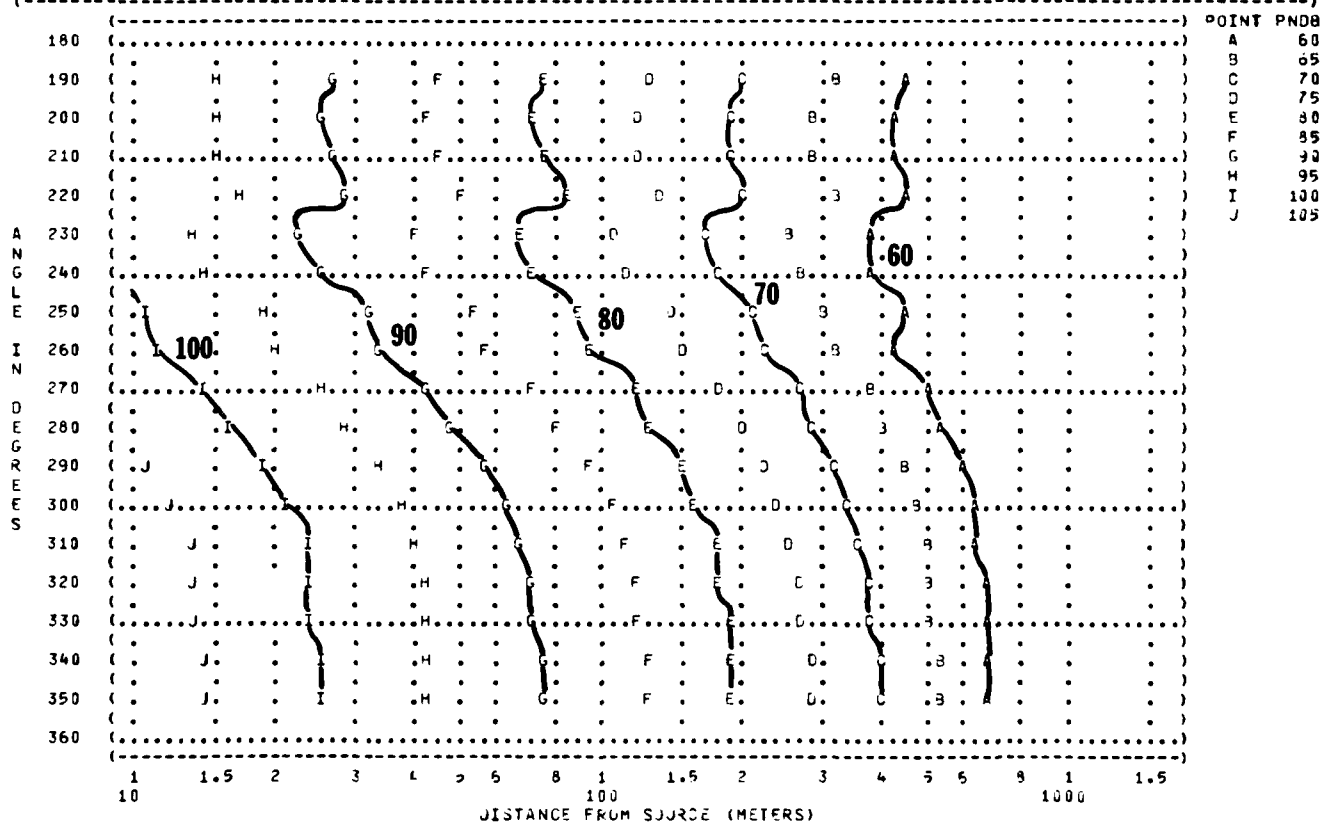
( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 %

( 23KW PER AC PHASE )





( FIGURE: PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT) ) IDENTIFICATION: )  
 ( 6 EQUAL LEVEL CONTOURS (PNDB) ) )  
 ( ) OMEGA 1.4 )  
 ( ) TEST AU-101-001 )  
 ( ) PUN 02 )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ( METEOROLOGY: )  
 ( A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-8A LOAD BANK ) BAR PRESS = .760 M HG )  
 ( ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( ( 23KW PER AC PHASE ) )  
 ( ) PAGE 14 )





7

) IDENTIFICATIONS

OMEGA 1.4

TEST AU-101-001

TEST RUN 02

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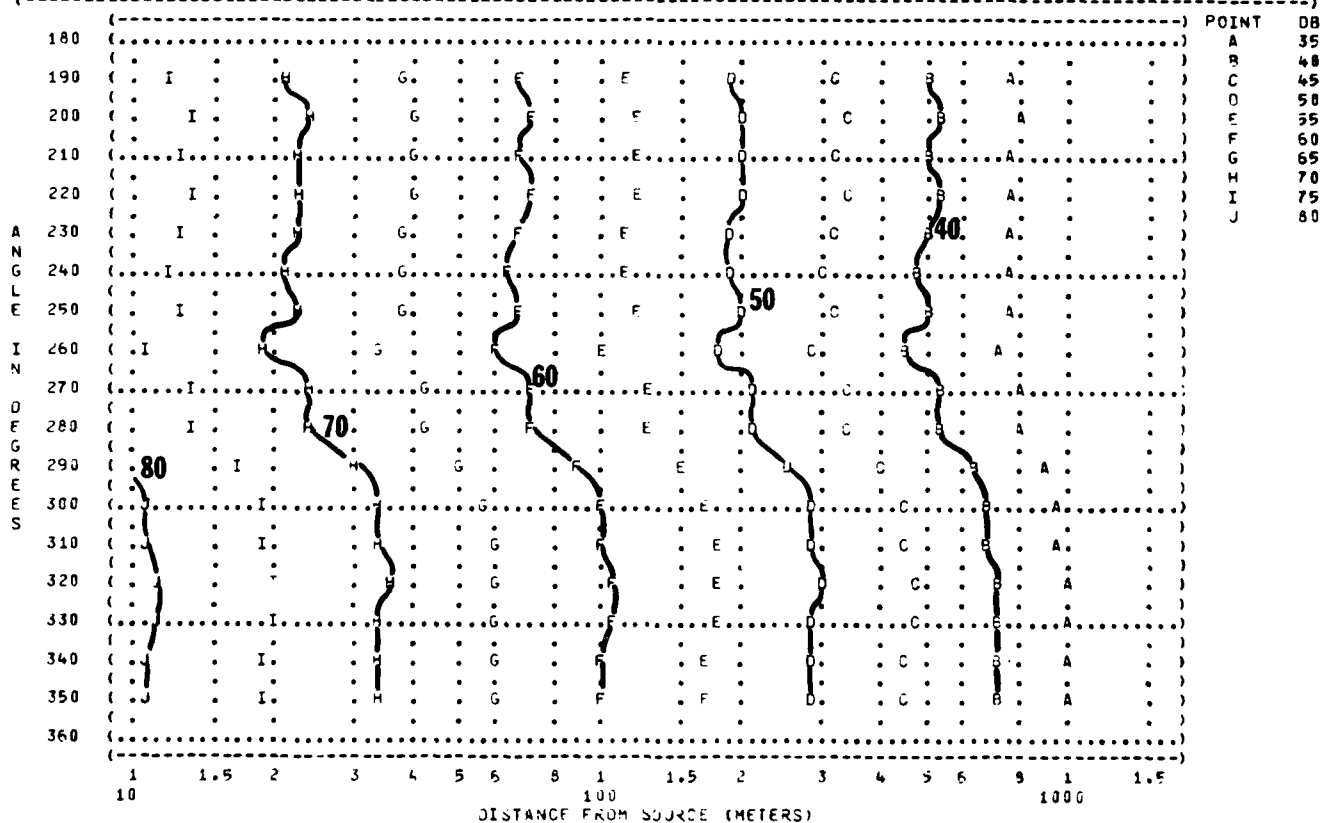
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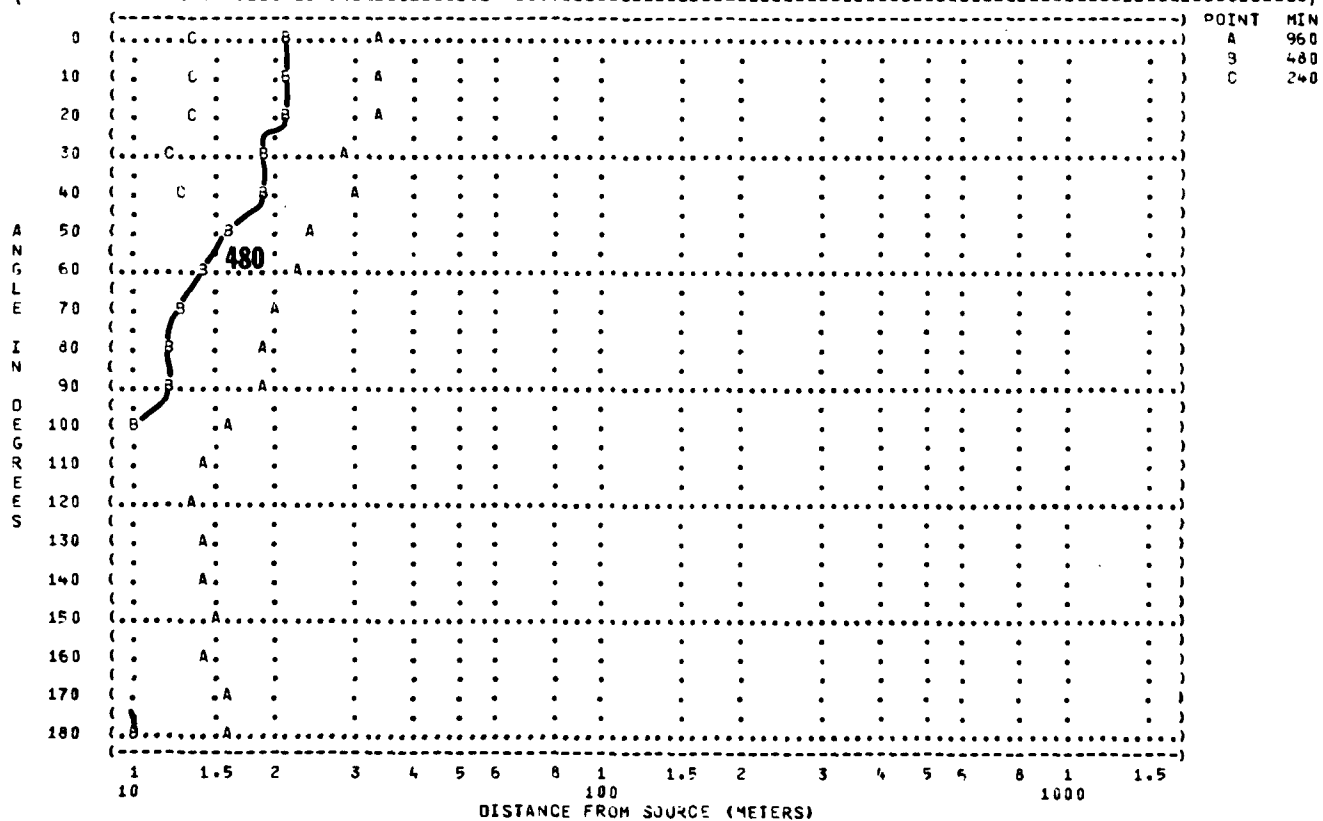
( OPERATION:
(   DIESEL ENGINE AT 2000 RPM
(   A/M 24T-8A LOAD BANK
(   190 AMP, 240VAC, 400HZ
(   23KW PER AC PHASE

```

METEOROLOGY:  
TEMP = 15 C  
BAR PRESS = .760 M HG  
REL HUMID = 70 %



( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 101-35, JULY 73) ) IDENTIFICATION: )  
 ( 8 EQUAL TIME CONTOURS (MINUTES) ) )  
 ( NO PROTECTION ) )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: ) )  
 ( A/M32A-66 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C ) )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-6A LOAD BANK ) BAR PRESS = .760 M HG ) )  
 ( ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % ) )  
 ( ( 23KW PER AC PHASE ) ) )  
 ( ) PAGE 5 )







( FIGURE 8 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )  
 ( EQUAL TIME CONTOURS (MINUTES) ) )  
 ( MINIMUM QPL EAR MUFFS ) )  
 ( NOISE SOURCE/SUBJECT: ( OPERATIONS: ) METEOROLOGY: ) TEST AU-101-001 )  
 ( A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C ) RUN 02 )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-9A LOAD BANK ) BAR PRESS = .760 M HG ) 26 OCT 81 )  
 ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( 23KW PER AC PHASE ) ) PAGE 6 )

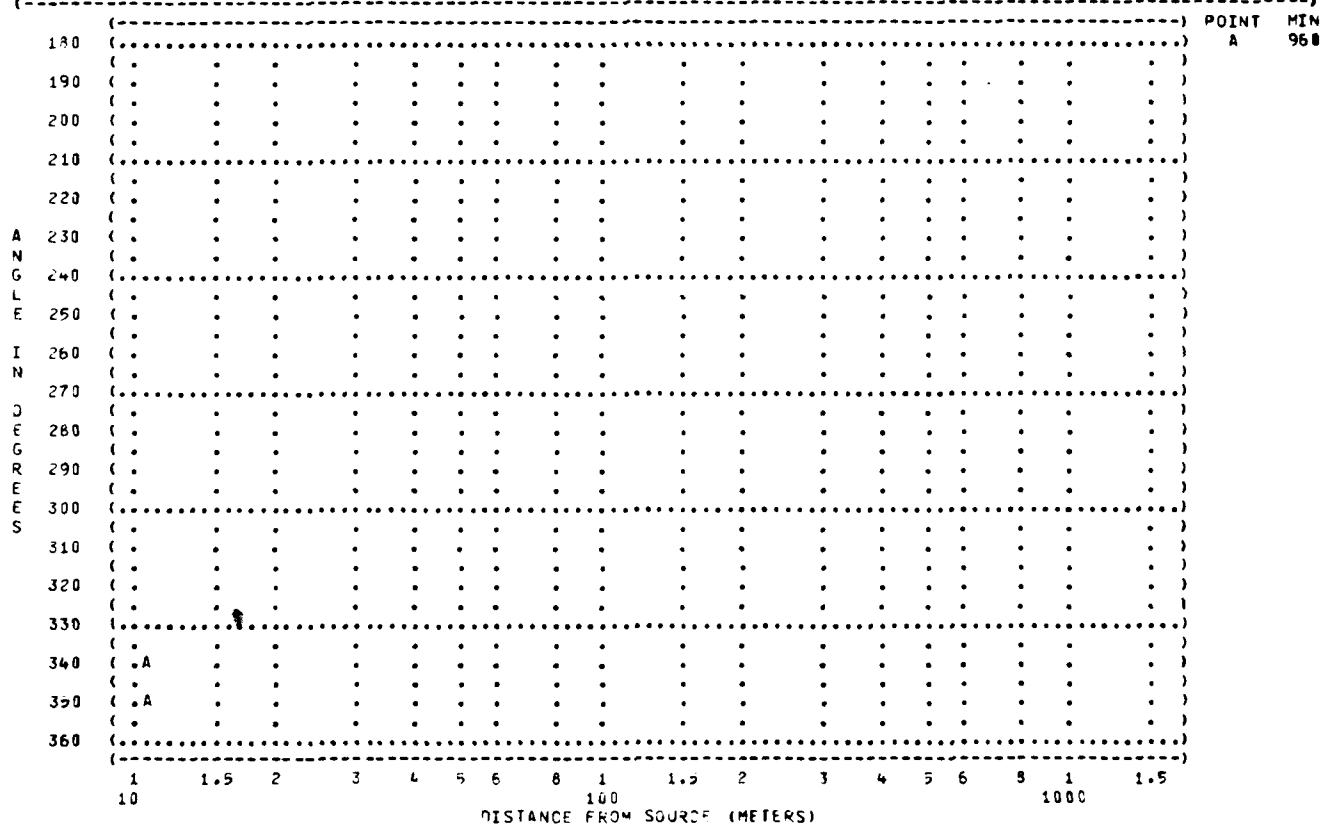


FIGURE 8 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)			IDENTIFICATION
EQUAL TIME CONTOURS (MINUTES)			
NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:	OMEGA 1.4
A/M32A-66 GENERATOR SET	DIESEL ENGINE AT 2000 RPM	TEMP = 15 C	TEST AU-101-C01
FAR FIELD NOISE LEVELS	A/M 24T-6A LOAD BANK	BAR PRESS = .760 M HG	RUN 01
	190 AMP, 240VAC, 600HZ	REL HUMID = 70 %	26 OCT 81
	23KW PER AC PHASE		PAGE 7

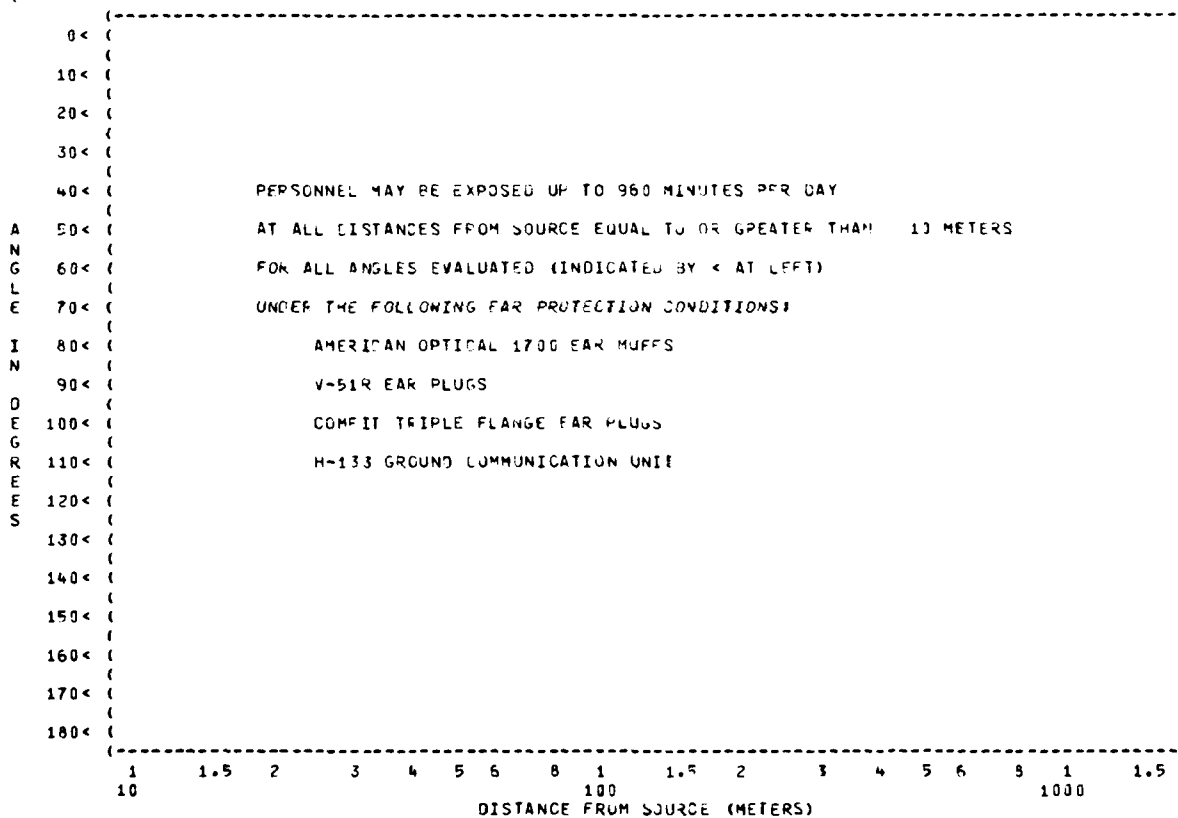
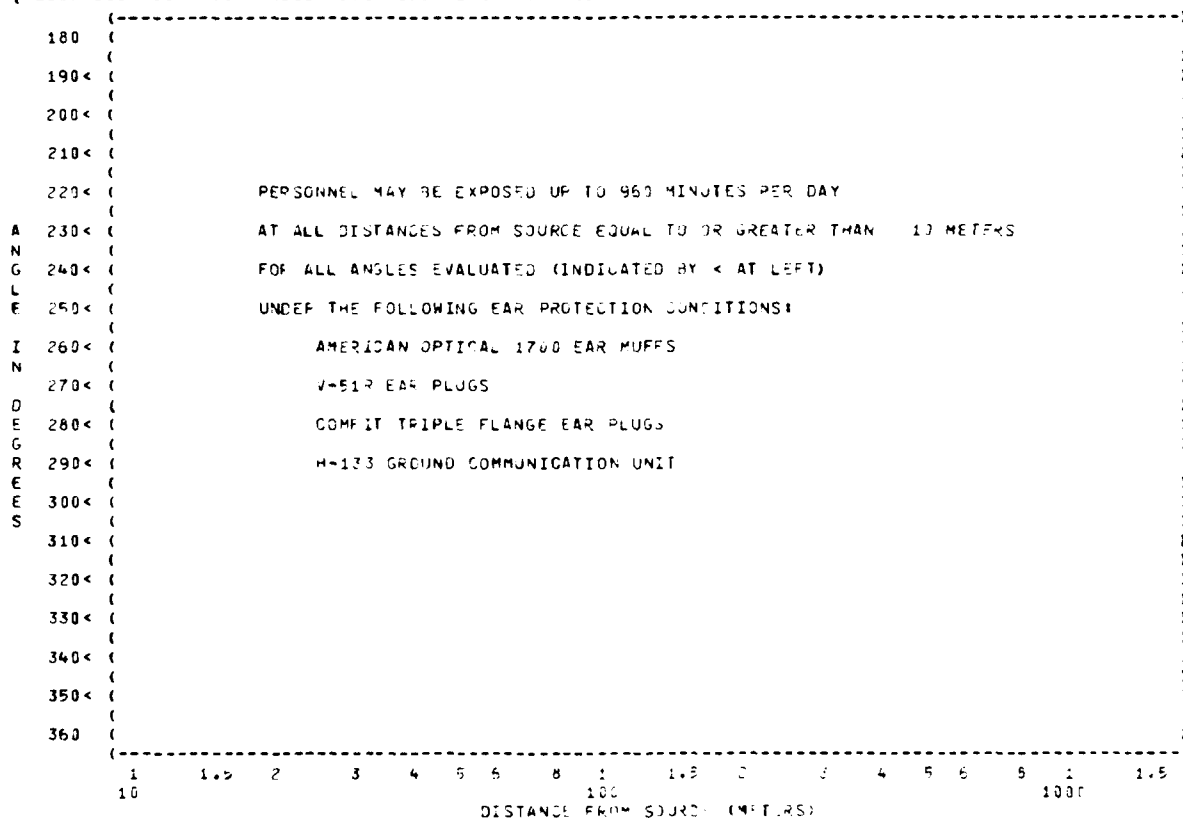
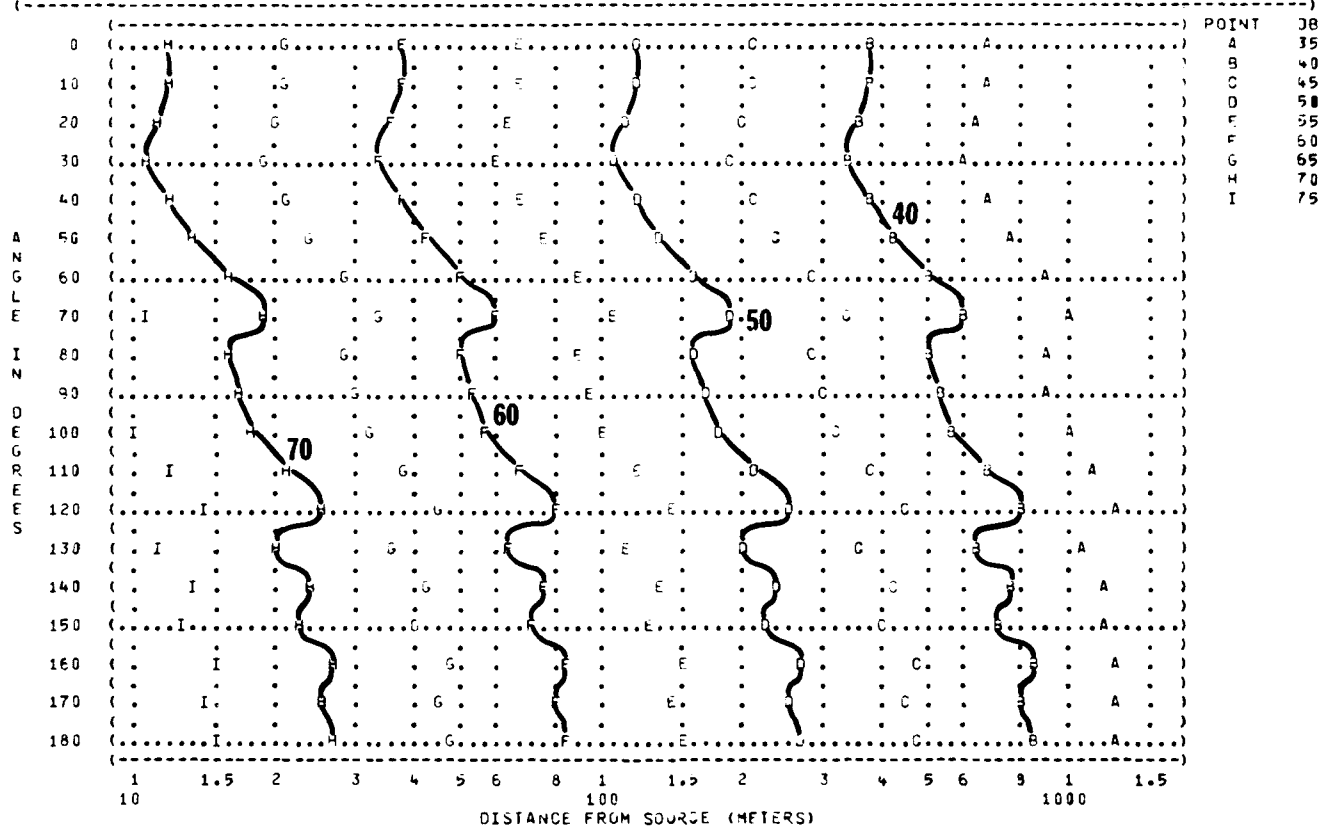




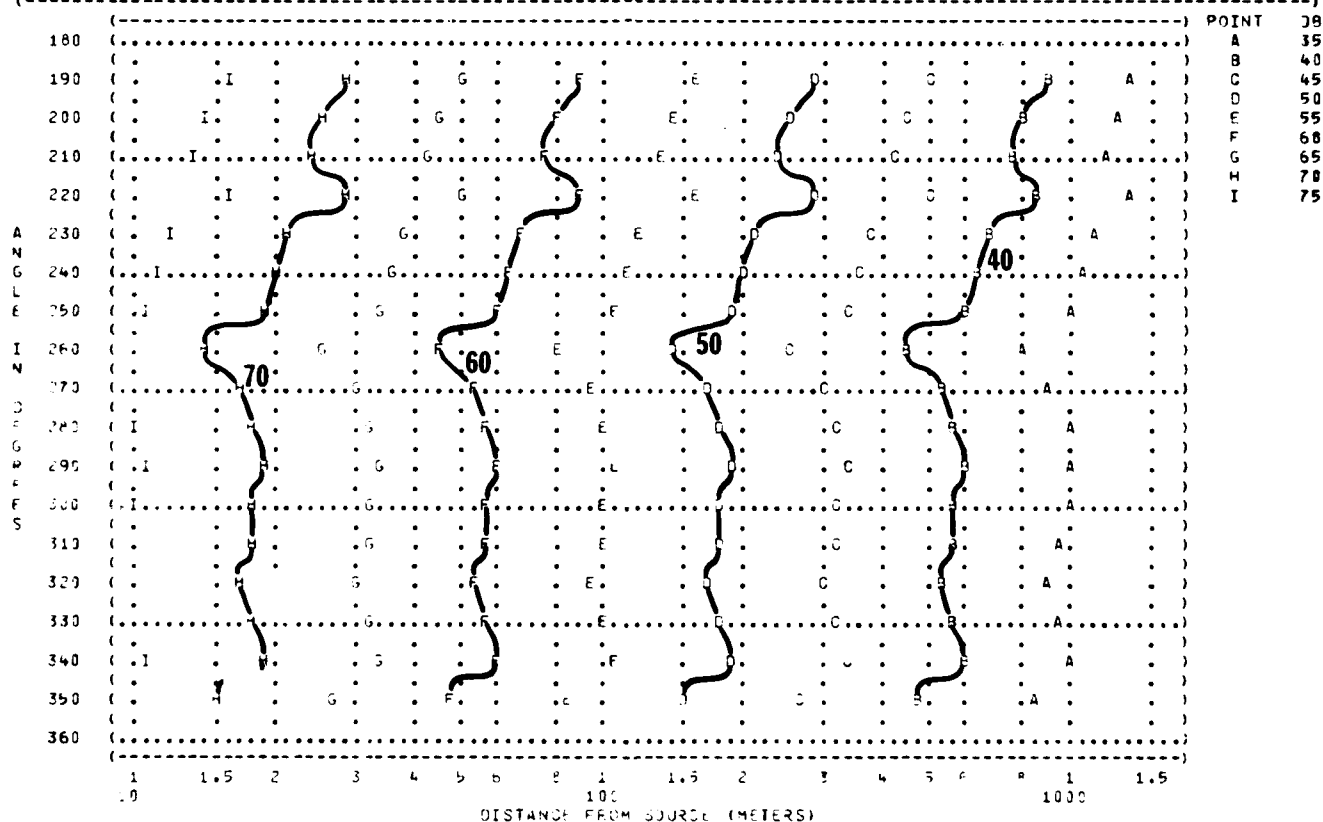
FIGURE 1: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (APR 161-35, JULY 73)			IDENTIFICATION:
8 EQUAL TIME CONTOURS (MINUTES)			
NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:	OMEGA 1.4
A/H32A-86 GENERATOR SET	DIESEL ENGINE AT 2000 RPM	TEMP = 15 C	TEST AU-101-031
FAR FIELD NOISE LEVELS	A/H 24T-8A LOAD BANK	BAR PRESS = .760 M HG	PUN G2
	190 AMP, 240VAC, 400HZ	REL HUMID = 70 %	26 OCT 81
	23KW PER AC PHASE		PAGE 7



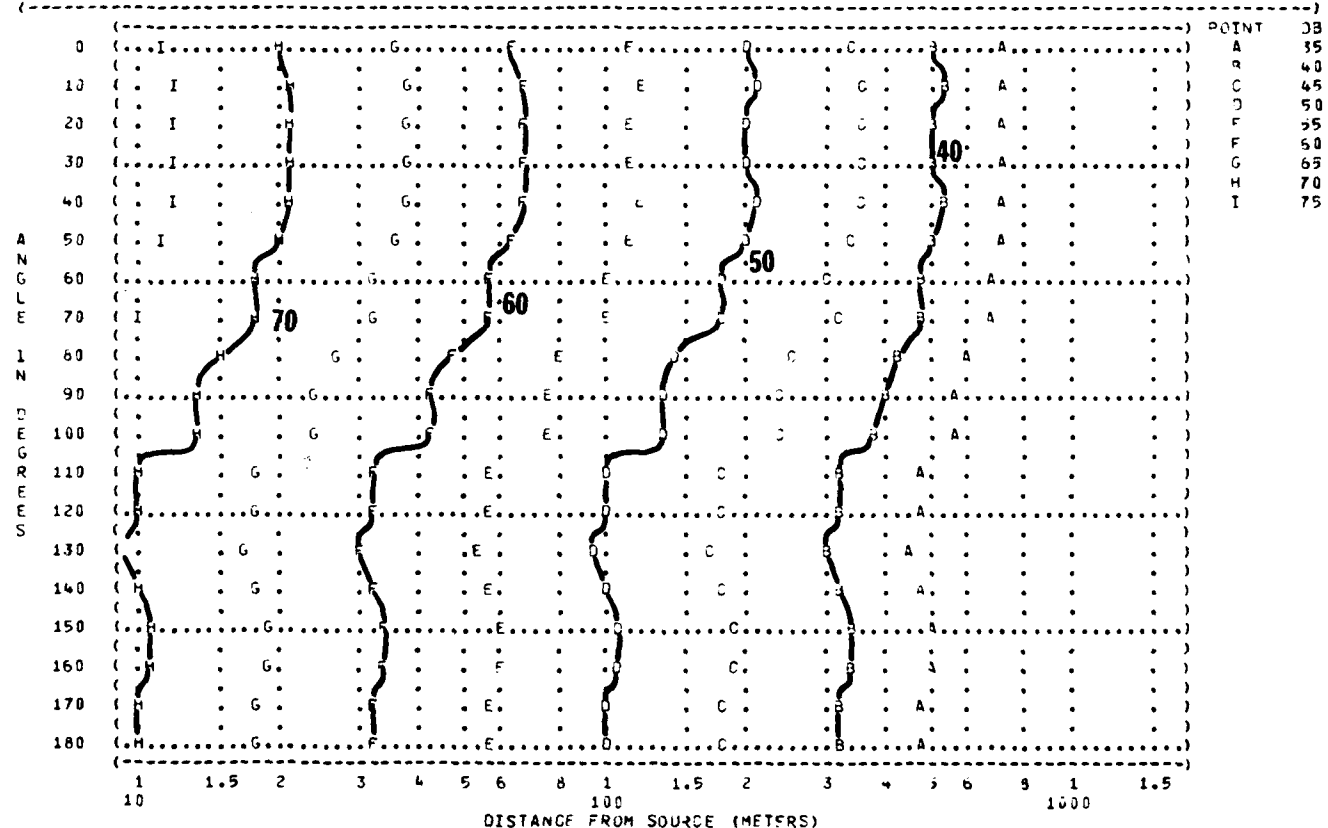
( FIGURE: SOUND PRESSURE LEVEL (SPL) ) IDENTIFICATION: )  
 ( 9 EQUAL LEVEL CONTOURS (dB) ) )  
 ( 31.5 HZ OCTAVE BAND ) )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
 ( A/M32A-66 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-8A LOAD BANK ) BAR PRESS = .760 Hg )  
 ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( 23KW PER AC PHASE ) )  
 ( ) RUN 01 )  
 ( ) 26 OCT 91 )  
 ( ) PAGE 16 )



( FIGURE: SOUND PRESSURE LEVEL (SPL) ) IDENTIFICATION: )  
 ( 9 EQUAL LEVEL CONTOURS (DB) ) )  
 ( 31.5 HZ OCTAVE BAND ) )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
 ( A7432A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-8A LOAD BANK ) BAR PRESS = .760 M H3 )  
 ( ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( ( 23KW PER AC PHASE ) )  
 ( ) TEST AU-101-031 )  
 ( ) RUN 02 )  
 ( ) 26 OCT 81 )  
 ( ) PAGE 16 )



( FIGURE: SOUND PRESSURE LEVEL (SPL) ) IDENTIFICATION: )  
 ( 9 EQUAL LEVEL CONTOURS (DB) ) )  
 ( 63 HZ OCTAVE BAND ) )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
 ( A/H32A-80 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C )  
 ( FAR FIELD NOISE LEVELS ( A/H 24T-3A LOAD BANK ) BAR PRESS = .760 M Hg )  
 ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( 23KW PER AC PHASE ) )  
 ( ) TEST AU-101-001 )  
 ( ) RUN 01 )  
 ( ) 26 OCT 81 )  
 ( ) PAGE 17 )



( FIGURE: SOUND PRESSURE LEVEL (SPL) )  
 ( 9 EQUAL LEVEL CONTOURS (DB) )  
 ( 63 HZ OCTAVE BAND ) ) IDENTIFICATION: )  
 ( ) )  
 ( ) OMEGA 1.4 )  
 ( ) TEST AU-101-501 )  
 ( ) RUN 02 )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
 ( A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-8A LOAD BANK ) BAR PRESS = .760 M HG )  
 ( ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( ( 23KW PER AC PHASE ) ) )  
 ( ) PAGE 17 )

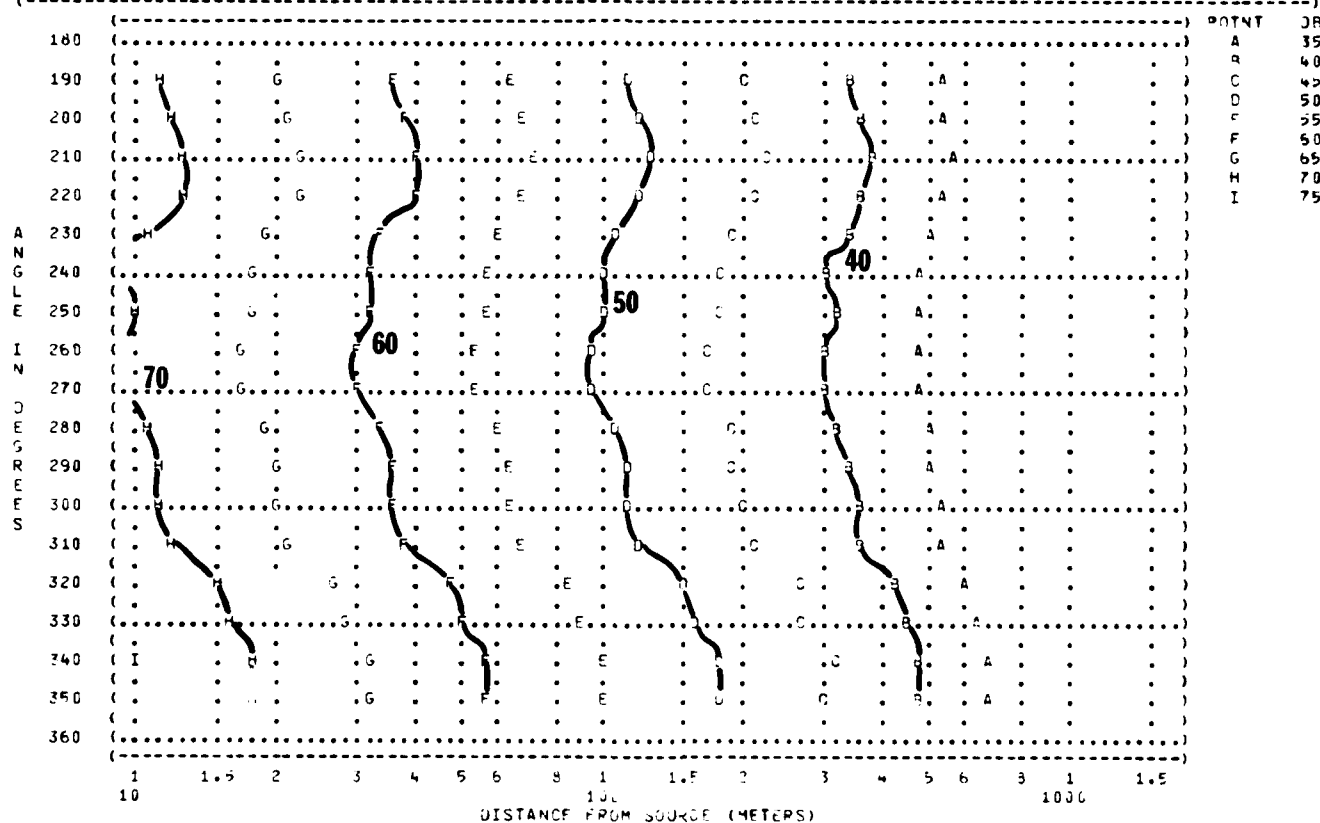


FIGURE 9 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND			IDENTIFICATION:
			OMEGA 1.4
			TEST AU-101-001
			RUN 01
NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:	
A/M32A-66 GENERATOR SET	DIESEL ENGINE AT 2000 RPM	TEMP = 15 C	26 OCT A1
FAR FIELD NOISE LEVELS	A/M 24T-6A LOAD BANK	BAR PRESS = .760 M HG	
	190 AMP, 240VAC, 400HZ	REL HUMID = 70 %	
	23KW PER AC PHASE		PAGE 18

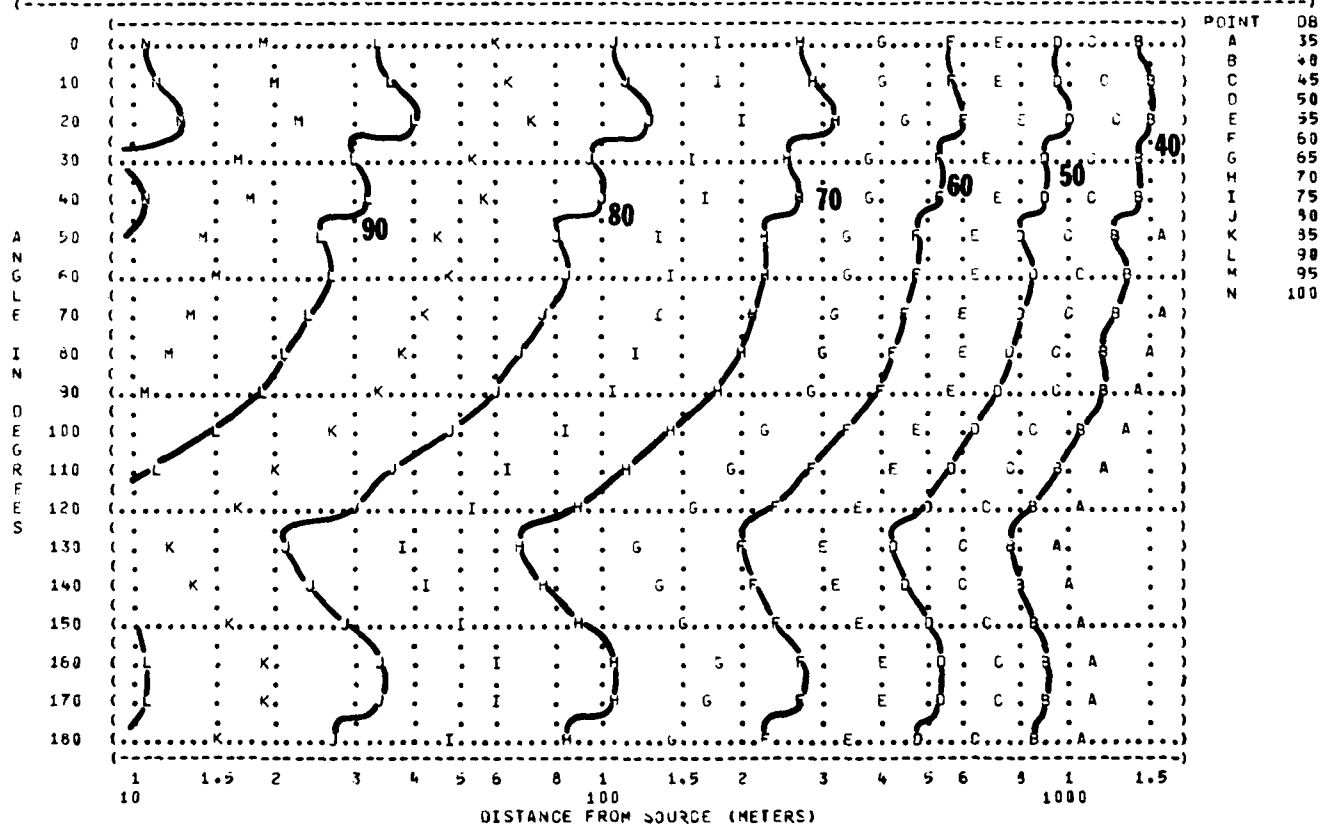
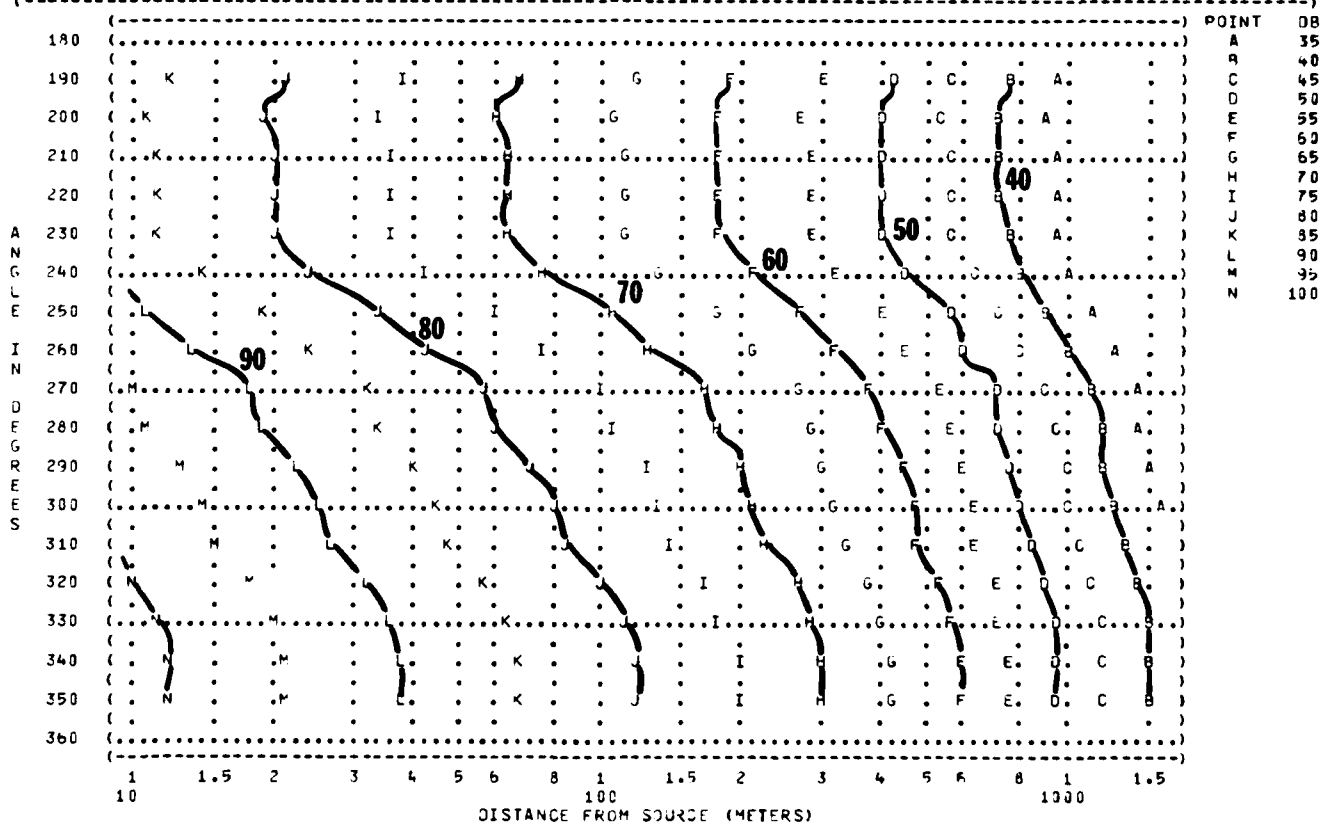
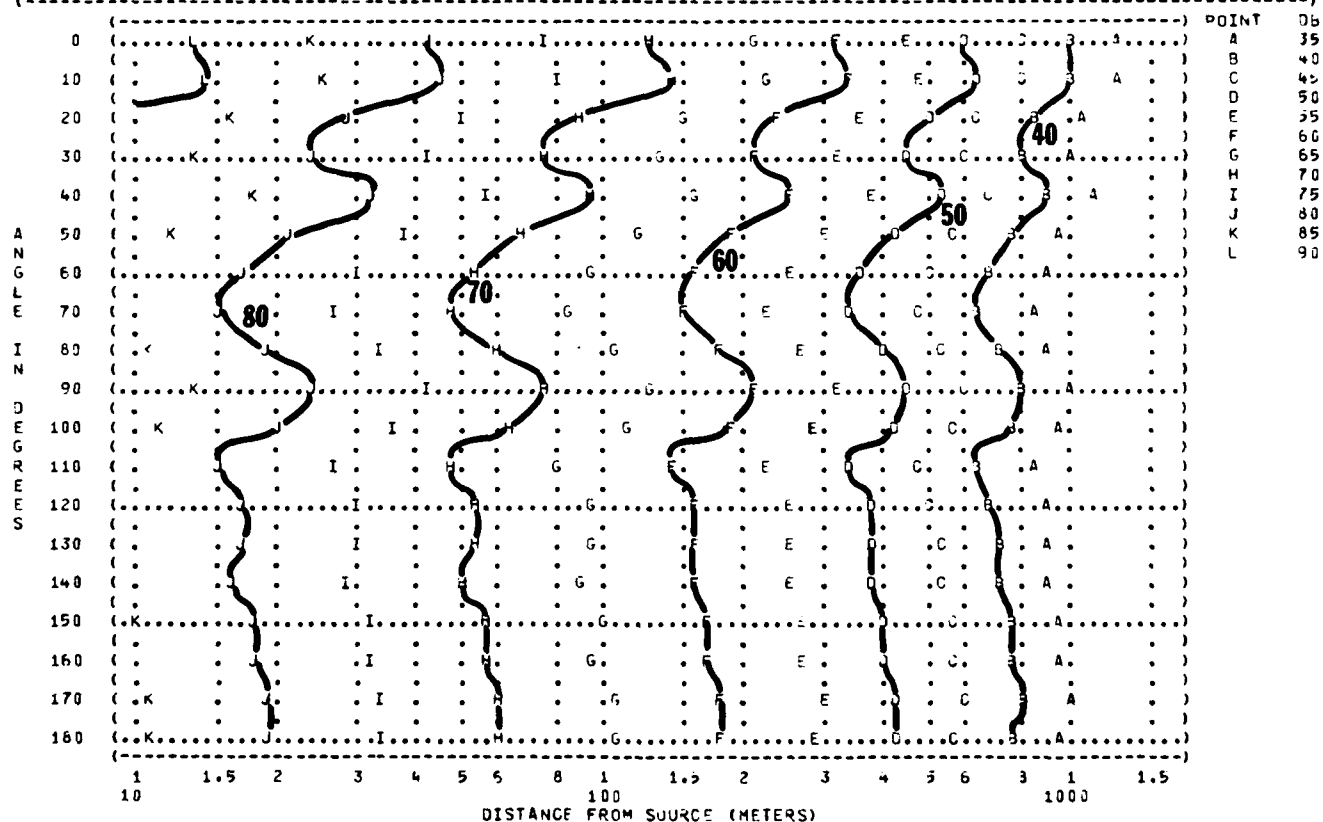


FIGURE: SOUND PRESSURE LEVEL (SPL)			IDENTIFICATION:
9 EQUAL LEVEL CONTOURS ((3))			
125 HZ OCTAVE BAND			OMEGA 1.4
			TEST AU-101-001
NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:	RUN 02
A/M32A-86 GENERATOR SET	DIESEL ENGINE AT 2000 RPM	TEMP = 15 C	
FAR FIELD NOISE LEVELS	A/M 24T-3A LOAD BANK	BAR PRESS = .760 MM HG	26 OCT 81
	190 AMP, 240VAC, 400HZ	REL HUMID = 70 %	
	23KW PER AC PHASE		PAGE 18

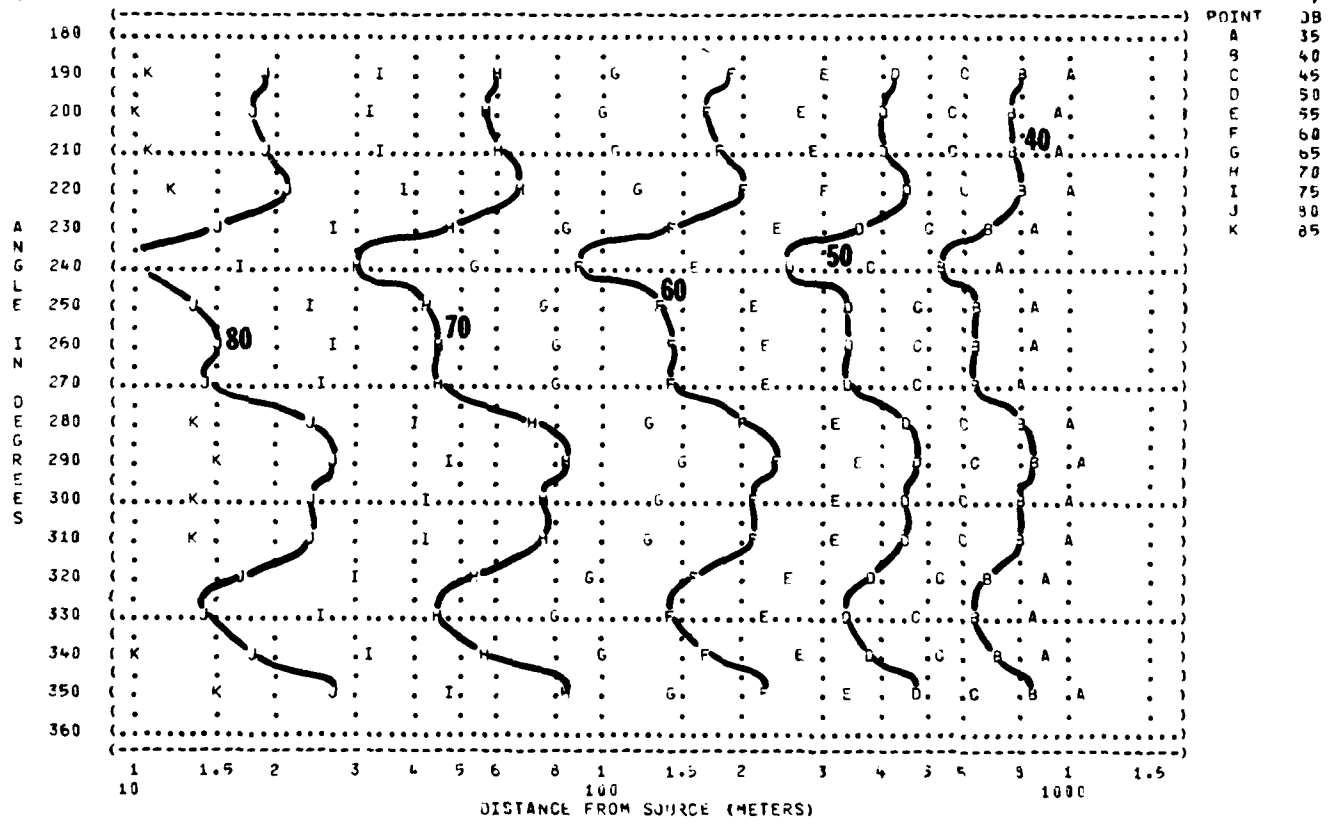


( FIGURE: SOUND PRESSURE LEVEL (SPL) ) IDENTIFICATION: )  
 ( 9 EQUAL LEVEL CONTOURS (dB) ) )  
 ( 250 HZ OCTAVE BAND ) )  
 ( ) OMEGA 1.4 )  
 ( ) TEST AU-101-001 )  
 ( ) RUN 01 )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
 ( A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-8A LOAD BANK ) BAR PRESS = .760 M HG )  
 ( ) 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( ) 23KW PER AC PHASE ) )  
 ( ) PAGE 19 )

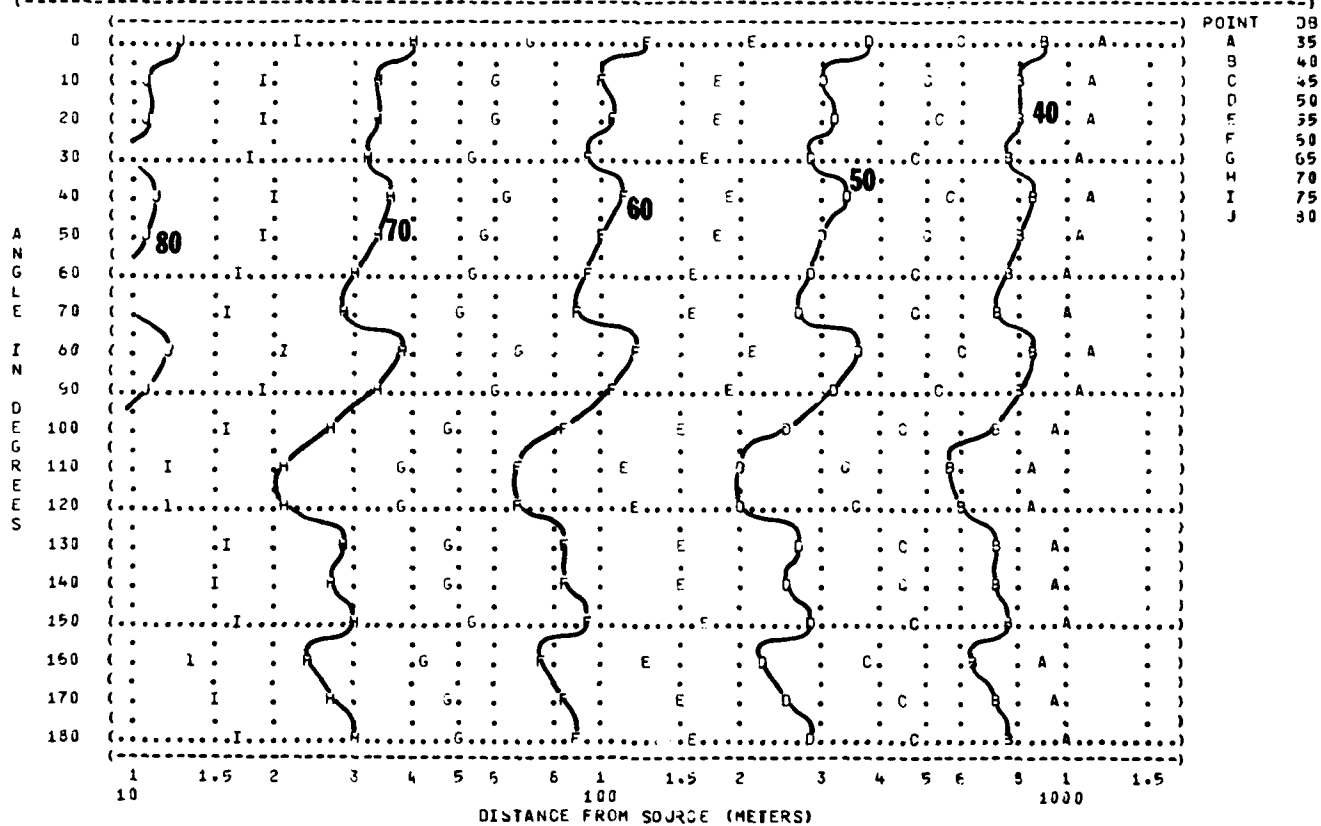




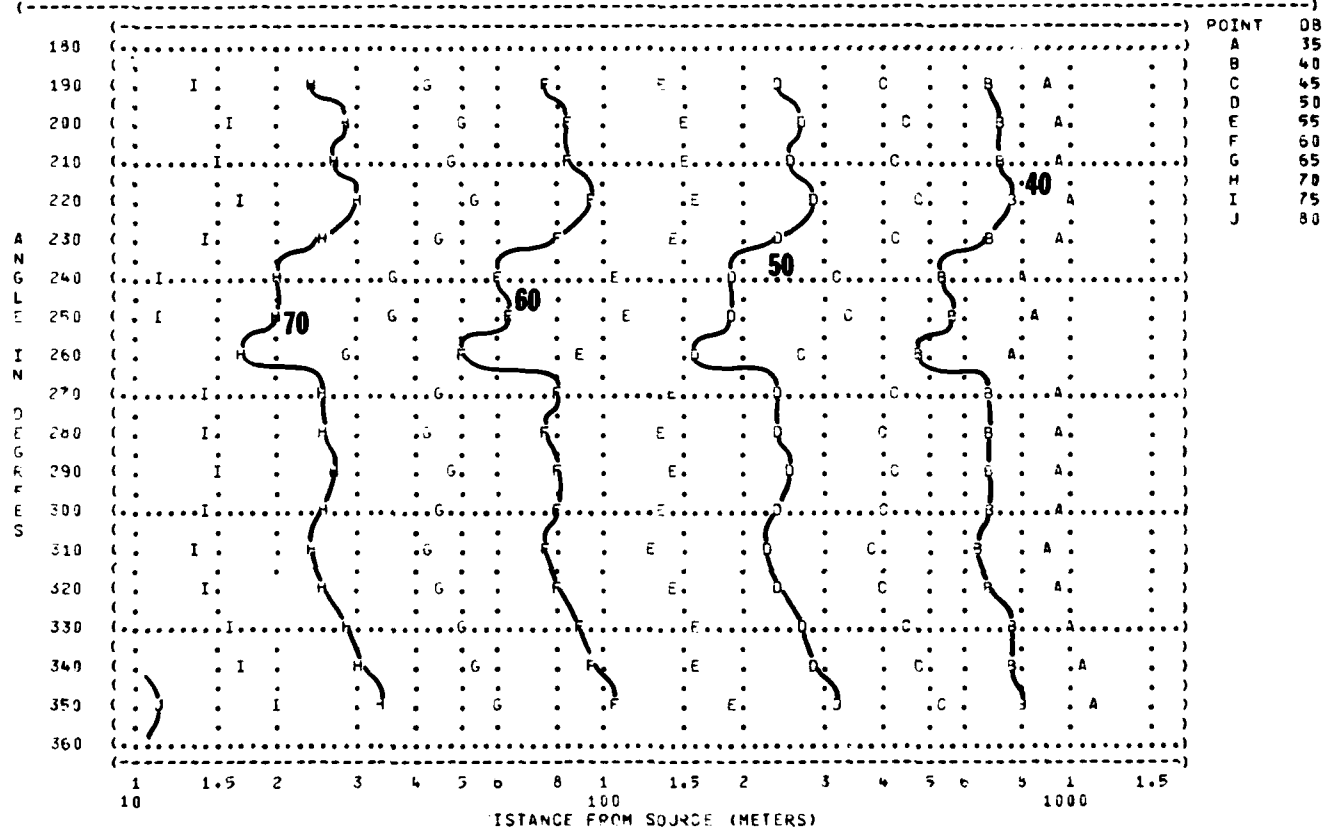
( FIGURE: SOUND PRESSURE LEVEL (SPL) )  
 ( 9 EQUAL LEVEL CONTOURS (DB) )  
 ( 250 HZ OCTAVE BAND )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
 ( A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-8A LOAD BANK ) BAR PRESS = .760 MM HG )  
 ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( 23KW PER AC PHASE ) )  
 ( IDENTIFICATION: )  
 ( )  
 ( ) OMEGA 1.4 )  
 ( ) TEST AU-101-001 )  
 ( ) RUN 02 )  
 ( ) 26 OCT 91 )  
 ( ) PAGE 19 )



( FIGURE: SOUND PRESSURE LEVEL (SPL) ) IDENTIFICATION: )  
 ( 9 EQUAL LEVEL CONTOURS (D3) ) )  
 ( 500 HZ OCTAVE BAND ) )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
 ( A/M32A-66 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-3A LOAD BANK ) BAR PRESS = .760 M HG )  
 ( 130 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( 23KW PER AC PHASE ) )  
 ( ) TEST AU-101-C01 )  
 ( ) RUN 01 )  
 ( ) 26 OCT 81 )  
 ( ) PAGE 20 )

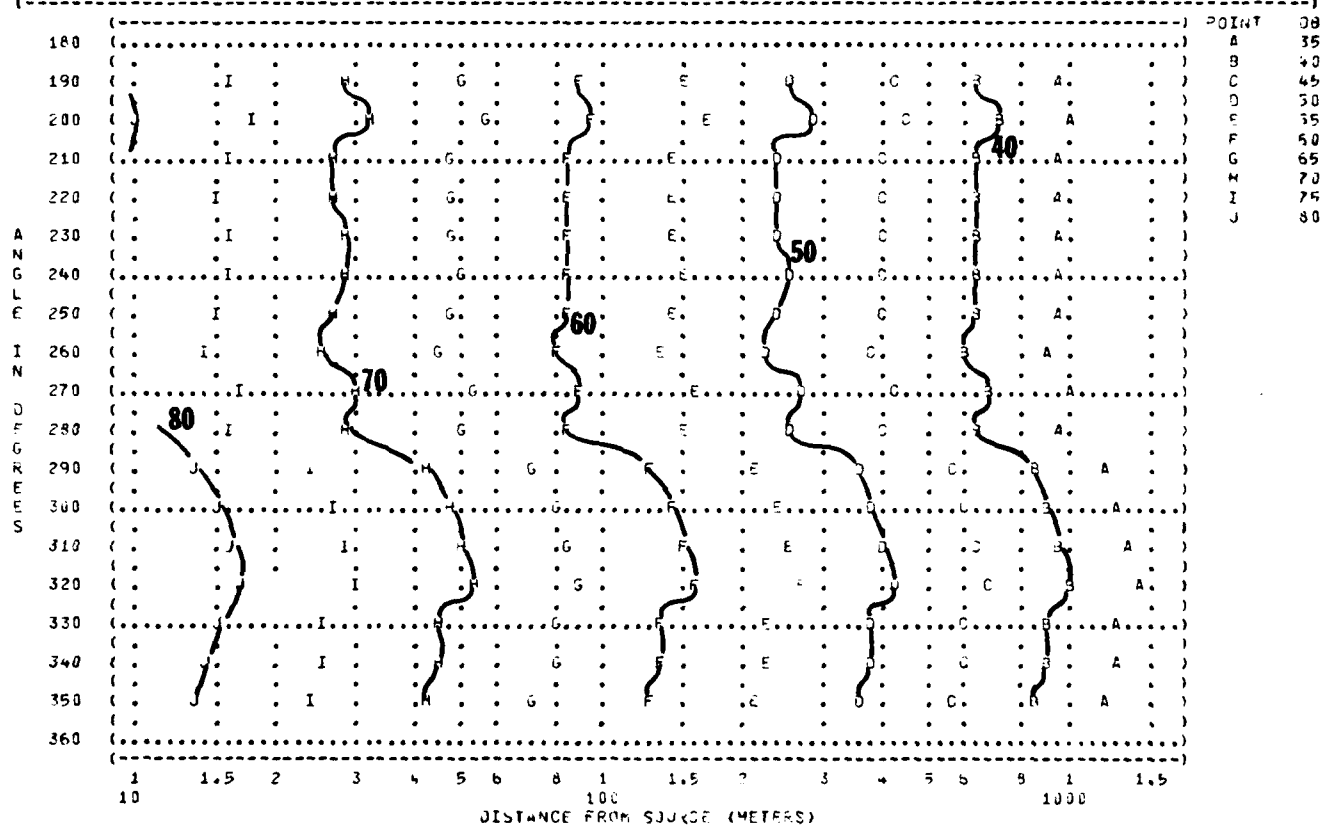


( FIGURE: SOUND PRESSURE LEVEL (SPL)			) IDENTIFICATION:	
( 9 EQUAL LEVEL CONTOURS (dB)			) OMEGA 1.4	
( 500 HZ OCTAVE BAND			) TEST AU-101-001	
( NOISE SOURCE/SUBJECT:		( OPERATION:	) METEOROLOGY:	
( A/M32A-86 GENERATOR SLT		( DIESEL ENGINE AT 2000 RPM	) TEMP = 15 C	
( FAR FIELD NOISE LEVELS		( A/M 24T-8A LOAD BANK	) BAR PRESS = .760 M HG	
		( 190 AMP, 240VAC, 400HZ	) REL HUMID = 70 %	
		( 23KW PER AC PHASE	) PAGE 20	

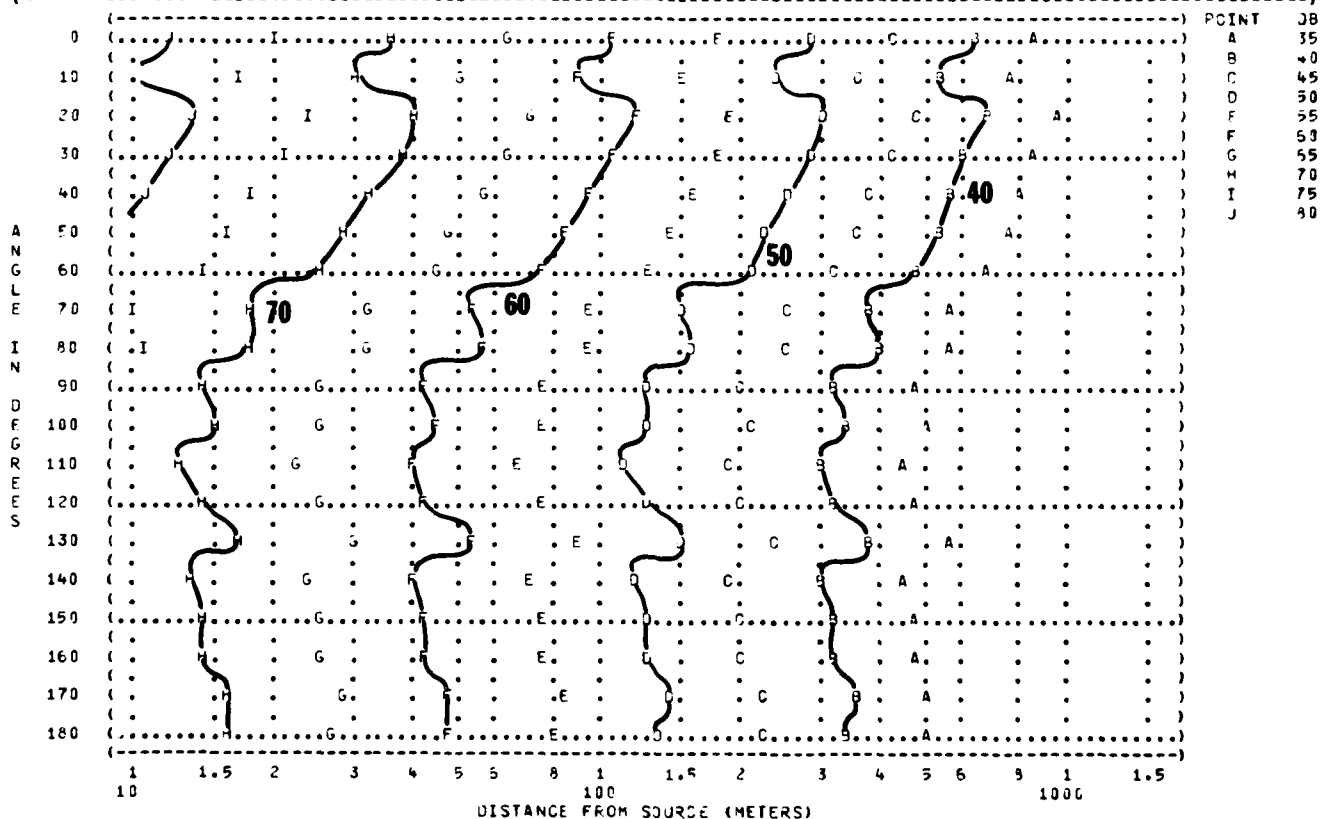




( FIGURE: SOUND PRESSURE LEVEL (SPL) ) IDENTIFICATION: )  
 ( 9 EQUAL LEVEL CONTOURS (DB) ) )  
 ( 1000 HZ OCTAVE BAND ) )  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
 ( A/M32A-86 GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 15 C )  
 ( FAR FIELD NOISE LEVELS ( A/M 24T-3A LOAD BANK ) BAR PRESS = .760 M HG )  
 ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 % )  
 ( 23KW PER AC PHASE ) )  
 ( ) TEST AU-101-001 )  
 ( ) RUN 02 )  
 ( ) 26 OCT 81 )  
 ( ) PAGE 21 )



( FIGURE 9 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (dB) 2000 HZ OCTAVE BAND )			( IDENTIFICATION: )
			( )
			( ) OMEGA 1.4 )
			( ) TEST AU-101-001 )
( NOISE SOURCE/SUBJECT: )	( OPERATION: )	( METEOROLOGY: )	( FUN 01 )
( A/M32A-E6 GENERATOR SET )	( DIESEL ENGINE AT 2000 RPM )	( TEMP = 15 C )	( )
( FAR FIELD NOISE LEVELS )	( A/M 24T-8A LOAD BANK )	( BAR PRESS = .760 M HG )	( 26 OCT 61 )
	( 190 AMP, 240VAC, 400HZ )	( REL HUMID = 70 % )	( )
	( 23KW PER AC PHASE )		( )
			( ) PAGE 22 )



( FIGURE: SOUND PRESSURE LEVEL (SPL)			IDENTIFICATION:	
( 9 EQUAL LEVEL CONTOURS (DS)				
( 2000 HZ OCTAVE BAND				
( NOISE SOURCE/SUBJECT:			OMEGA 1.4	
( OPERATION:			TEST AU-101-001	
( A/M32A-86 GENERATOR SET			RUN 02	
( DIESEL ENGINE AT 2000 RPM				
( W/M 24T-3A LOAD BANK			TEMP = 15 C	
( FAR FIELD NOISE LEVELS			BAR PRESS = .750 H HG	
( 190 AMP, 240VAC, 400HZ			26 OCT 81	
( 23KW PER AC PHASE			REL HUMID = 70 %	
			PAGE 22	

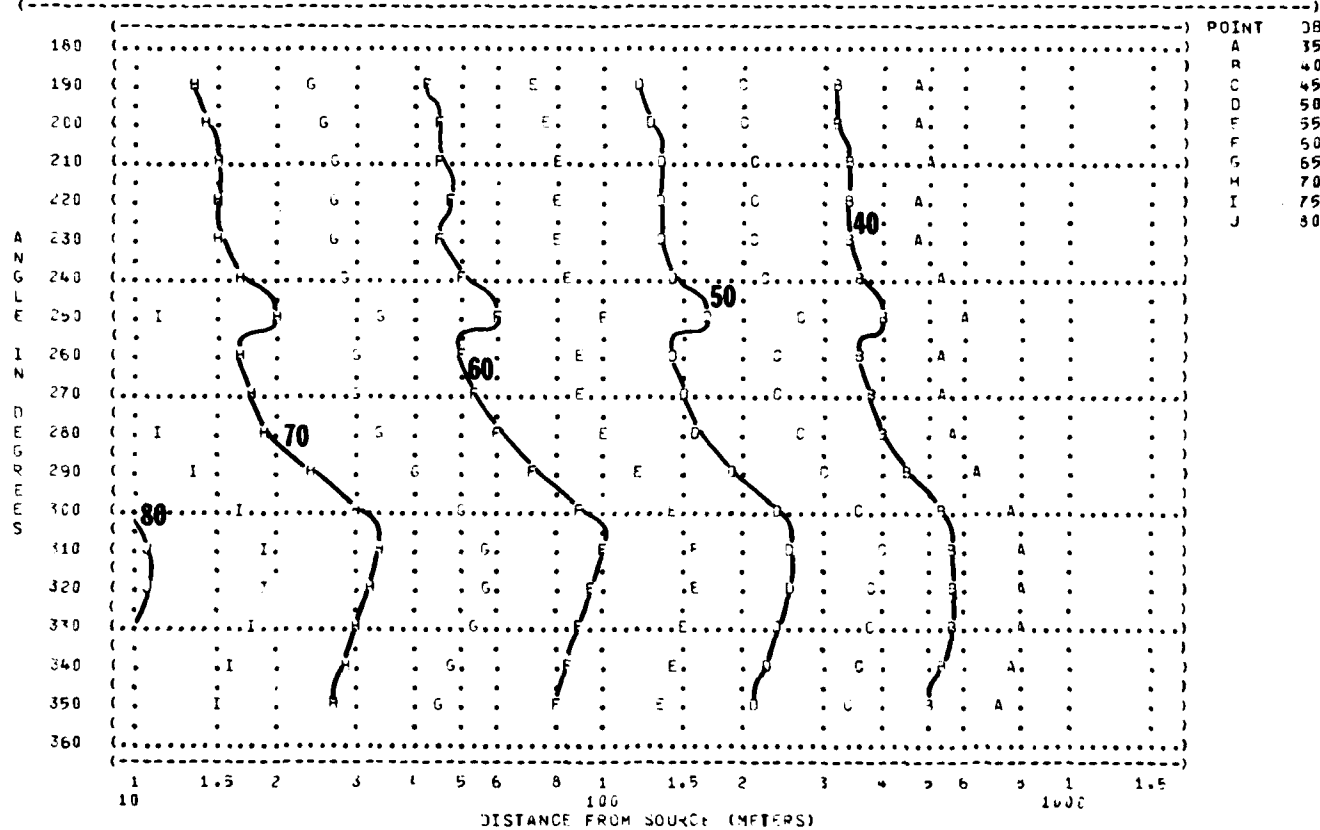


FIGURE: SOUND PRESSURE LEVEL (SPL)  
 9 EQUAL LEVEL CONTOURS (LS)  
 4000 HZ OCTAVE BAND

IDENTIFICATION:  
 OMEGA 1.4  
 TEST A-101-001  
 RUN 01  
 26 OCT 81  
 PAGE 23

NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY:  
 A/M32A-85 GENERATOR SET ( DIESFL ENGINE AT 2000 RPM ) TEMP = 15 C  
 FAR FIELD NOISE LEVELS ( A/M 24T-8A LOAD BANK ) BAR PRESS = .760 M HG  
 ( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 %  
 ( 23KW PER AC PHASE )

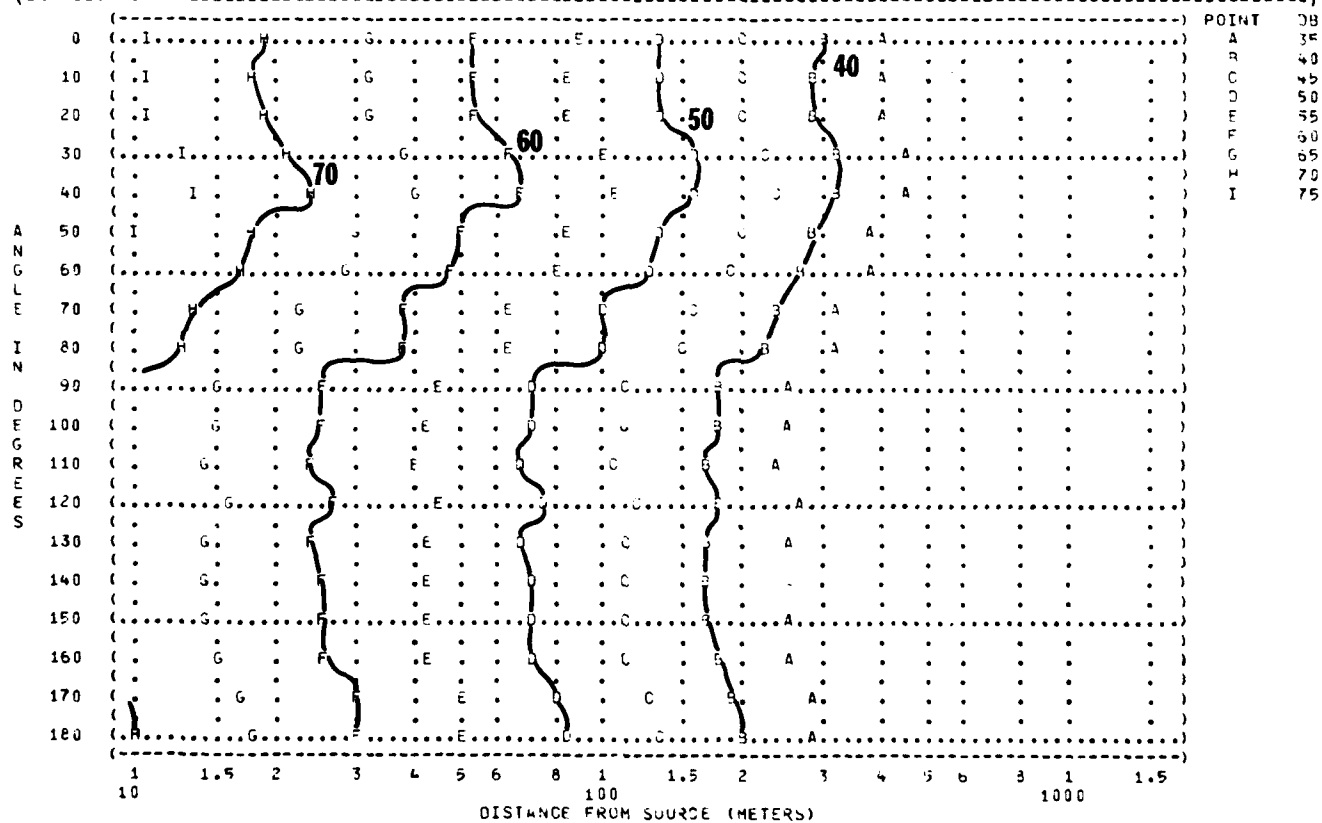


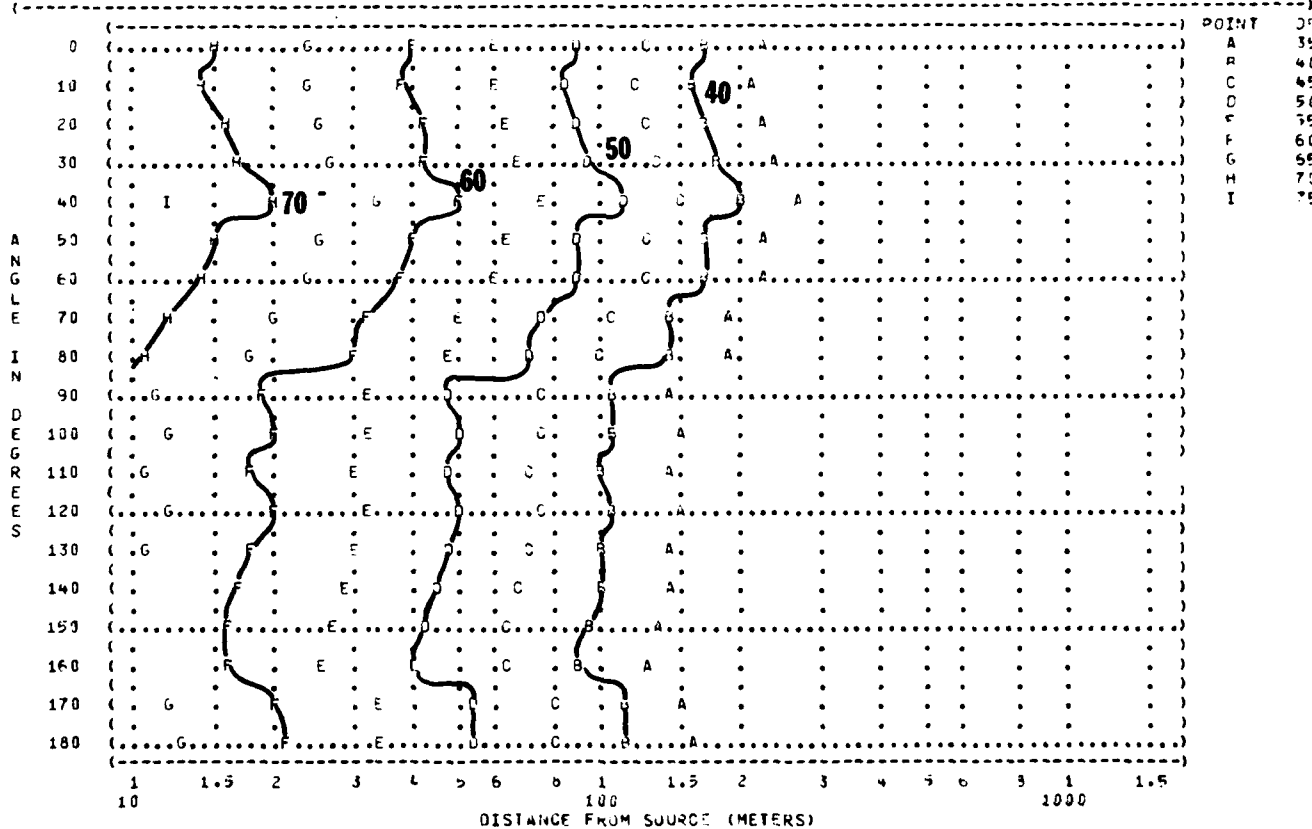




FIGURE 9 SOUND PRESSURE LEVEL (SPL)  
EQUAL LEVEL CONTOURS (dB)  
8000 HZ OCTAVE BAND

IDENTIFICATION:  
OMEGA 1.4  
TEST AU-101-001  
RUN 01  
26 OCT 81  
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NOISE SOURCE/SUBJECT: ( OPERATIONS: ) METEOROLOGY:  
A/M32A-Pd GENERATOR SET ( DIESEL ENGINE AT 2000 RPM ) TEMP = 19 C  
FAR FIELD NOISE LEVELS ( A/M 24T-9A LOAD BANK ) BAR PRESS = .760 H-HG  
( 190 AMP, 240VAC, 400HZ ) REL HUMID = 70 %  
( 23KW PER AC PHASE )





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